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**Navigating the Canals:
Making and Moving Venetian Renaissance Paintings**

by

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Abstract

This thesis investigates the production and transportation of large-scale paintings on canvas, with a particular focus on Venice in the Renaissance. Since there is no specific literature devoted to the subject, it illustrates the object and the field, using three main research questions. Increasingly, the concept of “mobility” is considered one of the essential factors to a more complete understanding of the historical and physical conditions of artworks, as well as to present them to the public, and preserve them for future generations.

Chapter I investigates the role of guilds involved in packing and transportation of goods. It brings together for the first time what we know of the various relevant corporations from published literature and archival sources. Chapter II considers the Importance of transport during art production, by analysing how much aspects of transportation were taken into account while the artist was conceiving a large-scale painting on canvas. I share observations about the choice of best materials for supports, the best painting ground to be used on canvases about to be rolled up and shipped, as well as the construction of large-scale canvases (which are the result of several lengths of fabric sewn together). Other important issues concern the physical space where the painters used to work, or when and where they collaborated with the other artisans involved in the genesis of the artwork. Chapter III examines packing material, transportation procedures and damage in transit as revealed by documents regarding several Renaissance painters involved with the packing and shipping procedures of their products. This includes the search for patterns in packing stuffs, the most common modes of transport, the risks of transportation, and the responsibilities of the many parties involved. Chapter IV analyses a group of Venetian Renaissance paintings from the National Gallery of London to ascertain whether paintings show any evidence of damage caused by transport. I focus in particular on the transit of the paintings prior to their arrival at the Gallery, their handling and transportation history, as well as the damage incurred in transit which, in some cases, is still visible today beneath the surface. The final part of the thesis contains an

appendix of conversations with restorers, and a database of the National Gallery paintings that I selected as my case studies.

Introduction

In this thesis I bring together and analyse the existing studies about the transport of paintings in the Late Middle Ages and Renaissance. I devote particular attention to Venetian practices, collecting the scattered information that can be found in archival documents and in published literature. I focus on a group of paintings preserved in The National Gallery of London as case studies, to investigate the physical consequences of transport.

First of all, it is worth clarifying why Venice is the main case study for this project. To what extent should Venice be considered a distinctive and unique environment for transport? Without a doubt, handling a very large-scale painting on canvas must have been particularly challenging in Venice, since the city's unique physical environment posed special practical problems to painters and artisans. Because of its large number of canals, bridges, stairs, and narrow alleys, Venice does not allow an easy walk for more than a few metres. Of course, another difficulty to face in Venice is the high tide that submerges a large part of the city's land routes, especially during fall and winter. Transportation of goods and people in Venice has been considered a particular topic in recent studies¹, and it is impossible to imagine any kind of activity in the city that did not encounter substantial physical barriers. Did the Venetian environment really represent limitations for transportation activities? Or did the predominant presence of water facilitate transport? We can suppose, for example, that the canal system was unfavourable for some types of transport, but very advantageous for others.² According to Rosa Salzberg, the Venetian situation is not to be considered unique in terms of mobility of goods and people, but it should rather be considered as the central hub in a much wider infrastructure network, stretching from Lombardy to Istria. Venetian spaces do not deserve to be merely classified as challenging and inconvenient: perhaps they should be accepted as characteristic features of a city where, exactly like every other city, all the

¹ Rosa Salzberg researched the movement of people in Renaissance Venice, also in relation to the phenomenon of print, see *Ephemeral City: Cheap Print and Urban Culture in Renaissance Venice* (Manchester: Manchester University Press, 2014).

² I have often received questions and comments regarding the “unicity” of the Venetian geographical environment among the other Italian Renaissance centres.

activities had to deal with specific and peculiar problems of mobility. I believe that it is appropriate to consider the problem of mobility for every specific activity carried out in the Serenissima. In this thesis, however, I mostly focus on the practices of packing and transportation of large-scale paintings. For the shipping operations of many of these paintings, as well as for sculptural works, the large number of waterways would allow easier shipping to the mainland or toward the open sea, compared to the difficulties of the more expensive, slower and riskier overland transport. The special attention often dedicated to Venice, especially in Venetian studies, must not distract us from the fact that, in the Middle Ages and Renaissance, Venice was not a self-contained city. On the contrary, thanks to the strong connections with an incredibly high number of other centres (due to its strategic position in the Adriatic Sea and its commercial monopoly), Venice was a dynamic axis of artistic production and export. In the same way in which foreign artworks arrived in Venice from outside, Venetian artworks were regularly shipped to a wide range of destinations, including remote ones. Therefore, Venetian artistic workshops had to be specifically organised to work with their customers from afar. The historical documentation demonstrates that since the time of Paolo Veneziano, the most important workshops of the city produced paintings for many centres outside of Venice, both on the mainland and across the Adriatic³. For all these reasons, further investigation into how paintings were packed, shipped, and transported can be very fruitful, especially if we stop considering Venice a unique city, and if we keep up our interest in what happened in other centres and beyond Venice. In addition to this, the scattered nature of the historical records means that it is essential to consider non-Venetian examples (such as the documentation produced for Francesco di Marco Datini, the "merchant of Prato").

³ Occasionally, documents record that Venetian artists shipped serially many of their products to the same town: for instance, Jacobello del Fiore made several paintings for Pesaro. For the export market of paintings in Renaissance Venice: Peter Humfrey, *The Altarpiece in Renaissance Venice* (Yale University Press, New Haven and London, 1993), p. 126. Also see *Il Trecento Adriatico. Paolo Veneziano e la Pittura tra Oriente e Occidente*, Catalogo della Mostra a cura di F. Flores D'Arcais (Silvana Editoriale: Milano, 2002).

Chronological Scope

Regarding the chronological scope of this work, I mainly focus on documentation dating back to the sixteenth century - this is also the timeframe of the group of The National Gallery of London paintings that I selected as my case studies - but not only. The information gathered about the Venetian guilds involved in transport activity discussed in Chapter I, is generally from the fourteenth or the fifteenth century, and it functions as historical background for the following chapters. Some of the sources that I consider date to a later period, for example Giovanni Battista Volpato stretching into the seventeenth century. Moreover, the material analysis of paintings needs to engage with later transport and packaging practice.

Literature Review

This thesis is one of the only attempts to collate and analyse the practice in its various aspects. Information on the shipping of panels and canvases is often scattered and marginalised in the sources. While a large number of original documents have already been transcribed and made available, they have never been systematically collected and studied. Scholars have seldom devoted in depth attention to these practical issues. Evidence on the topic can occasionally be found in transcriptions and publications of original archival documents. To cite an early study, in 1916 Carlo Maria Cipolla published his archival discoveries regarding the church of S. Anastasia in Verona. There he found that a lost polyptych carved by Jacopo Moranzone for the main altar of the church had been produced in Venice in 1440 and transported in 1443 to Verona. More precisely, the painting had been shipped on water from Venice to Ponte delle Navi in Verona, then taken by cart to the church, inside a packing crate specifically produced in Verona for the occasion.⁴ In 1929 Renato Piattoli published interesting documentation about the packing material used to ship an altarpiece commissioned in 1398 from the Florentine painter Giovanni di Tano Fei to the Franciscan community of

⁴ Carlo Maria Cipolla, 'Ricerche storiche intorno alla chiesa di Santa Anastasia in Verona', *L'Arte*, XIX (1916), pp. 234-236.

Bonifacio in Corsica. Letters from 1402 advised that the artwork should be carefully packed with clothes and enclosed in a packing crate.⁵

Many other sources contain information about the transport of paintings, but there is a dearth of studies bringing together and discussing data on this topic. Moreover, despite the existing literature regarding the various current methods to transport paintings today,⁶ the following select group of publications considers the history of this practice in past centuries.

One of the very first collection of data was presented by Peter Humfrey in 1993 in *The Altarpiece in Renaissance Venice*.⁷ Humfrey's work is particularly important because it presents, for the first time, a coherent discussion of documentary evidence related to the shipping of paintings. In the book's section titled "Travel and Transport", the author focuses on Venetian altarpieces from 1450 to 1530: for this reason his methods and his case studies have been significant for my research. Humfrey starts by presenting two documents, both dated April 18, 1513, written respectively by the painter Cima da Conegliano, in his own hand, and by Vettor da Feltre *intagliador*, the wood carver who collaborated with Cima. The written agreements are about the making of a polyptych for the church of S. Anna in Capodistria.⁸ The documents provide valuable information about the commissioning and

⁵ Renato Piattoli, 'Un mercante del Trecento e gli artisti del suo tempo', *Rivista d'Arte* XI (1929), pp. 221-253.

⁶ A relevant book is Marion F. Mecklenburg, *Art in Transit: Studies in the Transport of Paintings*, International Conference on the Packing and Transportation of Paintings, 1991 Sept. 9-11: London, England, (Washington: National Gallery of Art, 1991). The book is a collection of essays about the best way to pack and transport different kinds of paintings, and also about the damage caused to paintings during their transportation. The authors are mostly interested in the methods in use since 1991, as the volume aims to offer useful guidelines to packing and moving paintings during exhibitions. Thus it has been published together with a practical handbook: M. Richard, Marion F. Mecklenburg, and Ross Merrill, *Art in Transit: Handbook for Packing and Transporting Paintings* (Washington: National Gallery of Art, 1991). Several essays are relevant for my research since they contain technical observations on painting materials, in relation to the environment and to the means of transportation.

⁷ Peter Humfrey, *The Altarpiece in Renaissance Venice* (Yale University Press: New Haven and London, 1993), 157-159.

⁸ When Humfrey wrote his book, Cima's Capodistria polyptych was missing from the church since 1946 and its location was unknown, but it has been rediscovered, restored in 2010, and it is now preserved in the Museum of the Ducal Palace in Mantua.

execution of the altarpiece, as well as about the collaboration between painter and wood carver. The second of the two documents was written by the wood carver Vettor da Feltre, witnessed by Cima and his assistant. Vettor agreed to carve the polyptych's frame at his own expense, and to transport the completed work to the painter's workshop by the end of August 1513. As Humfrey highlights, in these agreements we can find the most common clauses of an Italian painter's contract of that time: attention to good quality of materials, deadlines for the completion of the work, importance of the sketched project, agreements for payments and evaluation of finished work. In my view, another important detail is that Vettor da Feltre explicitly mentions the delivery of the altarpiece to the painter, even if he does not mention how the painting would be transported.

Starting from the precious first-hand information contained in these documents, Humfrey explores four main fields of investigation:

- 1) both painters and their employers were involved in different ways in the choice of the form and the content of an altarpiece;
- 2) the collaboration between painters and woodcarvers;
- 3) the prices paid to painters for their altarpieces;
- 4) the export market, including extra-lagunar commissions which required painters to accompany their paintings.

All these aspects are important to understanding the process of making an altarpiece. In particular, the fourth item also has direct bearing on shipping and transport processes. Such issues will be addressed more in depth in this thesis. But first, it is important to highlight my main research questions and their connections with Humfrey's work.

How were large-scale paintings handled and shipped in Renaissance Venice?

As Humfrey says, in his study's considered timeframe (1450-1530), three of the most important Venetian workshops were led respectively by Giovanni Bellini, the Vivarini family, and Giovanni Battista Cima da Conegliano. They were well-known and successful painters with efficient and organised workshops, where they could develop several commissions at the same time.

For this reason, they used to pack and ship their products from Venice.⁹ It is well known that a Renaissance artistic workshop was a complex system of many workers with different roles. Starting from Humfrey's work, I investigate: how much is known about the handling of paintings inside the workshop? Did each workshop have a standard system to protect paintings for export? What were the most common packing methods and materials? Who was in charge of wrapping and shipping paintings? Moreover, it should be noted that when canvas gradually took the place of panel as a painting support, and Venetian painters had to handle extraordinarily large canvasses, new systems of handling and transport were required. What was the practice in Venice after 1530, with painters like Titian, Veronese or Tintoretto and their workshops? Closely related to the handling of travelling paintings is the problem of painters' working spaces in Venice. In fact, before being packed and shipped, a painting was handled by the master during production, within the studio space itself. What were the practical requirements for a good working space? Did they make concessions to the necessities of transportation? In the humid environment of the lagoon, large-scale oil paintings were difficult to handle also because they required longer to dry; thus a proper space would have been essential. Easy access to water was important for facilitating shipping and delivering. Occasionally, religious orders, private patrons or the

⁹ For instance, this is the case of Giovanni Bellini's Pesaro altarpiece, that was executed in Venice in 1471-1474 and shipped to Pesaro. The same working pattern is also visible in painters from other areas of Italy. For instance, when the Tuscan painter Giovanni di Stefano, also called Sassetta, painted in Siena his huge altarpiece for the Franciscan church in San Sepolcro, he was one of the most successful painters in Siena, and headed a lively workshop. After completion, the large and heavy altarpiece had to be sent to San Sepolcro. Thanks to the surviving contract dated 1437, we know that the transportation was paid for by the Church of San Francesco (when the artist was based far from the destination of the painting, the contract normally specified who had to pay for the transport and installation of the work of art). Sassetta was deemed responsible for protecting the painting. Therefore, he personally accompanied the painting during the journey. See James Banker, 'The Program for the Sassetta Altarpiece in the Church of S.Francesco in Borgo S.Sepolcro', *I Tatti Studies* 4 (1991), pp.51-53, doc.3. Thanks to the notary, Francesco de' Largi, we also know the exact day of installation of the altarpiece: June 2nd, 1444, *Ibid.*, p.56, doc.7.

government would offer the painter a space for working.¹⁰ Therefore, where were large-scale canvases usually painted?

Peter Humfrey observes that one of the consequences of the workshop organisation was that the painter and his employer rarely met; a large part of the commissioning process was managed by intermediaries. Some relevant sixteenth-century documentation demonstrates that the patron (or his delegate) often went in person to Venice to sign the contract or to check the progress of the work. Sometimes it was the painter who travelled to conduct a preliminary inspection, or to sign the contract, especially if the commission was very important or the journey not too long. In this way, the painter could have had more influence on the altarpiece's execution, with a clear understanding of its final setting. Lorenzo Lotto, Antonio and Bartolomeo Vivarini all followed this practice: they went to sign their contracts and, after this, came back to Venice to work in their workshop. In other cases the painter moved from Venice to accompany his painting to its final destination. This could happen, for instance, if the master was personally responsible for the safety of the altarpiece, or if the installation of a structurally complex altarpiece needed special supervision. Among these travelling artists, Humfrey mentions painters like Savoldo and Lotto, but also frame-makers like Alessandro da Caravaggio, or sculptors like Lorenzo Bregno. In cases of carved altarpieces, personal supervision by the artist was even more important. In some cases, documents tell how the painting was packed and shipped. Unfortunately, most of the times, archival documents are not very clear about the presence of the painter during transit: for example, we do not know if Cima personally accompanied his altarpiece to Capodistria.¹¹ We know that sometimes the painter remained in Venice, and sent an assistant with the altarpiece to supervise the installation, as Lorenzo Lotto did in 1548 for the delivery of his altarpiece to Mogliano.¹²

¹⁰ The government offered art spaces in Ca' del Duca and in San Samuele used, for example, by Bartolomeo Bon, Pietro Lombardo and, later, by Titian. Information about Venetian painters' working spaces in the fifteenth century can be found in Jennifer Fletcher, 'I Bellini' in *La Bottega dell'artista tra Medioevo e Rinascimento* (Milano: Jaca Book, 1998), p. 133.

¹¹ No professional supervision may normally have been required when the altarpiece could be transported entirely by water, without involving any changes of conveyance.

¹² P. Humfrey (1993), p. 158.

Peter Humfrey also reports that it wasn't unknown for the painter to leave Venice and move to the place of work.¹³ For instance, in 1506 Lorenzo Lotto moved to Recanati to work on his polyptych for San Domenico, and in 1513 he moved again to Bergamo to paint his altarpiece for the church of San Bartolomeo, known as the Colleoni-Martinengo altarpiece. For the realisation of the San Niccolò altarpiece in Treviso, Fra Marco Pensaben and Savoldo moved to this city in 1523-4. Humfrey suggests that this may not be a coincidence: none of the latter masters, at this time in their career, were leaders of considerably important workshops.¹⁴ They had nothing to lose in travelling far from their town.

Among the many issues addressed in his book, Humfrey focuses on the modes of transport and their varying costs. In the Late Middle Ages and Renaissance, transportation of goods could be effected either via land or via waterways.¹⁵ Shipping by either sea, river or canal, was generally cheaper and safer than overland transport. Documentation about transport of a polyptych by land can be found in an article by Lionello Puppi about Mantegna's triptych for San Zeno Maggiore in Verona. The altarpiece was painted in Mantegna's workshop in Padua between 1456 and 1459, and was

¹³ For travelling painters and artworks in Middle Age and Renaissance see the recent book by Jacques Dubois, Jean-Marie Guillouët et Benoît van den Bossche, *Les Transferts Artistiques dans l'Europe gothique* (Picard: Paris, 2014); David Young Kim, *The Traveling Artist in the Italian Renaissance: Geography, Mobility, and Style* (New Haven: Yale University Press, 2014); Meredith Martin and Daniela Bleichmar, *Objects in Motion in the Early Modern World*, Special issue of *Art History*, Vol. 38, Issue 4 (2015), Alina Payne, *Dalmatia and the Mediterranean: Portable Archaeology and the Poetics of Influence* (Brill Academic Pub, 2014), and Kelley Helmstutler Di Dio, *Making and Moving Sculpture in Early Modern Italy* (Farnham, Surrey: Ashgate Publishing Limited, 2015). All these are only a few examples of the rising interest in mobility as a theme across the humanities, and of the way it has been addressed in the work of art historians.

¹⁴ Masaccio did the same thing in 1426, when he was commissioned to execute a polyptych for Santa Maria del Carmine in Pisa. In order to carry out the work, he relocated to the Tuscan city for several months.

¹⁵ Important studies about transportation of goods in the Middle Ages are: Carlo Cipolla, 'In tema di trasporti medievali', *Bollettino Storico Pavese*, V, 1944, pp. 3-36; Norbert Ohler, *The Medieval Traveller* (Woodbridge: Boydell Press, 2010); Peter Spufford, *Power and Profit: the Merchant in Medieval Europe*, (London: Thames and Hudson, 2002). See also Sergio Gensini, *Viaggiare nel Medioevo* (Pacini Editore: Pisa, 2000) and H.C. Peyer, *Viaggiare nel Medioevo, dall'Ospitalità alla Locanda* (Laterza: Bari, 1990).

then taken to Verona on a horse-drawn wagon.¹⁶ However, when possible, transport by waterways was favoured. For instance, we know that three statues carved by Pietro Lombardo were shipped in November 1490 from Venice to Bergamo, where they were destined for the Colleoni Chapel. The first part of the journey was by river to Crema. Then a more expensive ox-cart carried the statues to their destination.¹⁷ Regarding Venice and its production of altarpieces, Humfrey emphasises the importance of waterways not only to reach other harbours in the Adriatic, but also to reach other mainland cities, such as Vicenza, Treviso, Padua, or towns in the valleys near Bergamo. Thanks to existing documents, sometimes we know who paid for transport: when the altarpiece was carried by waterways, the relatively small expenditure was often paid by the employer.¹⁸ Records testify to the complex system of payments and responsibility for transport. When in 1444 the painter Giambono and his frame maker Paolo Amidei sent their altarpiece overland from Venice to San Daniele in Friuli, the transport was challenging and expensive. Although the community of San Daniele paid for the transportation, the artists were fully responsible for the painting's safety.¹⁹ A rather complicated case involved the transport of a polyptych painted in Ancona by Bartolomeo di Tommaso and Domenico di Paolo for the main altar of S. Francesco in Ascoli Piceno. By contract, the two painters had to provide money for shipping to Ascoli via waterways, but the safety of the painting was

¹⁶ The relevant document was uncovered by Hans-Joachim Eberhardt, brought to wider attention by V. Herzner and commented upon in Lionello Puppi, 'Il trittico di Andrea Mantegna per la basilica di San Zeno Maggiore a Verona', *Art Bulletin* LVI (1974), pp. 440-442.

¹⁷ P. Humfrey (1993), p. 349.

¹⁸ Humfrey mentions the case of Savoldo's altarpiece for Pesaro, or Cima's altarpiece for Portogruaro. For Cima's altarpiece, see Peter Humfrey, *Cima da Conegliano* (Cambridge University Press, 1983), pp. 202-204; P. Humfrey (1993), p. 352.

¹⁹ Vincenzo Joppi, 'Di alcune opere d'arte in San Daniele del Friuli. Inediti documenti', *Archivio Veneto*, XXXI, (1886) pp. 468-469; Tiziana Franco, *Michele Giambono e il monumento a Cortesia da Serego in S. Anastasia a Verona* (Padova: Il Poligrafo, 1998) pp. 87 and 222-223.

ascribed to the friars of S. Francesco. For the second part of the journey, overland, the friars had to pay.²⁰

How important is transport in the production process of paintings?

It is well known that canvas was an essential support for paintings in Venice, since the humid climate of the lagoon was detrimental for frescoes. Painters used canvas to realise the large narrative scenes that had typically been painted in fresco in other artistic centres, such as Florence (where fresco cycles are arguably the main expression of the city's artistic production in the Middle Age and Renaissance). In Florence, as much as in many other Italian cities, frescoes cover churches and palaces' interiors, while in Venice the same function was usually performed by canvases.²¹ In Venice, canvas cloth was often coarse, presented patterns,²² and could also reach remarkable dimensions.²³ It is not uncommon to find canvasses measuring a number of

²⁰ The contract, dated 18 May 1429, has been discovered by Matteo Mazzalupi, Archivio notarile Recanati, 55, notaio Giacomo di maestro Petruccio, cc. 119v-120r, cited in Matteo Mazzalupi, 'Intorno a Bartolomeo di Tommaso: Ricerche sulla "Scuola di Ancona"', in *Intorno a Gentile da Fabriano: Nuovi Studi sulla Pittura Tardogotica*, ed. Andrea De Marchi, (Livorno: Sillabe, 2007), pp. 115-132.

²¹ On the strong predominance of canvases in Venetian artistic production, see Arthur Lucas, Joyce Plesters, 'Titian's "Bacchus and Ariadne"', *National Gallery Technical Bulletin* Vol.II, (1978), p. 38. See also Paul Hills, *Venetian Colour: marble, mosaic, painting and glass, 1250-1550* (New Haven; London: Yale University Press, 1999), p. 136.

²² For the variety of canvases' weights and textures in sixteenth-century Venetian paintings see: Jill Dunkerton, Susan Foister, Nicholas Penny, *Dürer to Veronese: Sixteenth-Century Paintings in the National Gallery* (New Haven, Conn; London: Yale University Press, 1999), pp. 265-270.

²³ One of the largest existing canvasses was produced by the Venetian painter Giovanni Antonio Fumiani, between 1680 and 1704 for the church of San Pantalon in Venice. The huge painting representing scenes from the life of San Pantalon was made to cover the entire ceiling of the church and it is still *in situ*. On account of its extraordinary dimensions (25 x 50 metres, and composed of 40 canvases sewn together) it is claimed to be the largest painting on canvas in the world. See Maria Da Villa Urbani, *Chiesa di San Pantalon Arte e Devozione* (Venice: Marsilio Editori, 1994), p. 24.

square metres produced for Venetian churches and palaces, but the question of where painters managed to get their canvases remains unanswered.²⁴

As Humfrey states, practical problems could also affect the choice of materials and format in artistic production. For instance, in Venice one of the most used materials to frame large-scale and medium-scale altarpieces was stone. Significantly, when the altarpiece was destined for the export market, the material for the frame was usually wood, like Vittorio da Feltre's frame for Cima's Capodistria polyptych. Stone frames were typically completed at the place of destination, *in loco*. Since stone is generally heavier than wood, might this distinction between wooden and stone frames be connected with the issue of transport? We can also extend this question to the painting support: was canvas often preferred to wood for the same reason?

Regarding the format of altarpieces destined for export, Humfrey suggests that sometimes the preference for polyptychs, rather than single panels, could have depended sometimes on its convenience for transport: a polyptych can be separated into parts and re-assembled *in situ*. In his view, panel continued to be the most requested support for traditional altarpieces thanks to its "greater appropriateness to the dignity of the altar table." However, the diffusion of canvas was inevitable because of "its cheapness, lightness, flexibility and durability".²⁵ This very interesting issue will be explored in later sections of this study. How much do factors of transport (distance to travel, chosen mode of transport, difference between waterway and overland transportation) impact on different choices in artistic practice, such as format or painting support? In other words, how many aspects of the final product were conditioned by transportation considerations?

Do paintings show any evidence of damage caused by transport?

²⁴ For the provenance of canvasses used by Venetian painters, important suggestions can be found in Paul Hills (1999), p. 136: "Venetian sailcloth industry meant that the painters did not have far to look either for a textile support or the technology of sewing loom-widths together to create large expanses for narrative." An important technical book on textile painting supports is Daphne De Luca, *I Manufatti Dipinti su Supporto Tessile. Vademecum per Allievi e Restauratori*, (Il Prato, 2012). For the sailcloth industry in Venice, see Maureen Fennell Mazzaoui, *The Italian cotton Industry in the Later Middle Ages, 1100-1600*, (Cambridge: Cambridge University Press, 1981), pp. 101-102.

²⁵ P. Humfrey (1993) p. 146.

Humfrey also observes that, in some cases, the presence of the painter or the frame-maker was essential to repair any damage caused by transit. This problem is crucial for my research, and will be addressed in my fourth chapter. What kind of damage could a painting, either panel or canvas, incur during transit? How many Renaissance paintings today show evidence of that damage? As we can see, Peter Humfrey's *The Altarpiece in Renaissance Venice* offers important material to conduct further research. In particular it provides a huge range of data that has been crucial for my work, including all the known altarpieces exported from Venice in the years 1450-1530 with their destination, all mapped.²⁶ In other words, starting from the data in Humfrey's book, it has been possible to open new research paths. By adding other documents to this cornerstone, we can extend his timeframe, consider other Venetian painters and their working practices on other types of painting, with different materials and supports.

Other scholars have also considered the problem of transport, especially with regard to panel paintings. In 1995 Anabel Thomas, in *The Painter's Practice in Renaissance Tuscany*, devoted a specific paragraph to the "delivery", where she provided information about the transport and delivery of Neri di Bicci's paintings.²⁷ Michelle O'Malley's *The Business of Art. Contracts and the Commissioning Process in Renaissance Italy* (2005) examines a corpus of 238 commissions for altarpieces and frescoes to illustrate various aspects of the commissioning and production process of works of art in Renaissance Italy.²⁸ Among other matters, she dedicates her attention to the transport of an altarpiece.

²⁶ P. Humfrey (1993), p.128.

²⁷ Anabel Thomas, *The Painter's Practice in Renaissance Tuscany*, (Cambridge University Press, 1995), pp. 197-206.

²⁸ Michelle O'Malley, *The Business of Art* (New Haven and London: Yale University Press, 2005).

Transport routes of stone sculptures but also of wooden altarpieces are mentioned by Dr. Markham Schulz in one of her recent publications.²⁹ She lists a series of case-studies to demonstrate that stone sculptures destined for the *terraferma* were commonly produced in Venice rather than at destination, since the raw material had to pass through Venice anyway. Markham Schulz also remarks how transport via land was much more hazardous and less preferred than waterways transport. To prove this, she mentions the case of Jacopo Moronzzone's lost altarpiece for the High Altar of the aforementioned church of Sant'Anastasia in Verona taken from Venice to Verona in 1443; shipping by boat was preferred for most of the journey, using a cart only at the end. Schulz also discussed works in wood shipped from Venice - preferably via waterways - to San Daniele del Friuli, Spilimbergo and Treviso. Finally, the scholar observes that - with a few exceptions - stonecarvers were more likely to remain in Venice to work, moving only to supervise installation, as opposed to woodcarvers who were more likely to manufacture their products at the place of destination.

Other studies are worth mentioning since they contain interesting findings about procedures of transport. In *The World of the Early Sienese Painter*, Hayden B. J. Maginnis lists four "pieces of evidence" regarding painters working far from the site of installation, all of them relating to fourteenth-century Sienese painters. The first document relates to Guido da Cino's *Madonna* for the church of San Giovanni Fuorcivitas in Pistoia in 1332, that was "fare facta in Siena" and "che viene da Siena". The second case is Lippo Memmi's set of three panels sent to "don Bruno" in 1334: the significant amount of money paid for their transport suggests both a far distance and a challenging task. The last two cases are Ugolino di Nerio's altarpiece for Santa Croce in Florence painted in 1325-8; and Ambrogio Lorenzetti's *Presentation to the Temple* painted in 1342 in Siena. For Ugolino's altarpiece the relevant information about the transport has been discovered by technical investigation on the panels preserved in the National Gallery of London. The

²⁹ I wish to thank Marie Louise Lillywhite for sending me the reference for Anne Markham Schulz, *The History of Venetian Renaissance Sculpture, Ca. 1400-1530* (Turnhout, Belgium: Harvey Miller Publishers, 2017), p. 34. An older but recommended source for the study of Venetian sculpture is also Susan Connell's Ph.D thesis (Warburg Institute) entitled *The Employment of Sculptors and Stonemasons in Venice in the Fifteenth Century*. published in 1988.

painter designed a new system of cylindrical dowels that would have allowed the various panels to be plastered, gilded, and painted as separate pieces in the workshop, then sent to Santa Croce and there assembled *in situ*.³⁰ I would add that the same method seems to have been used, for example, by the Venetian painter Antonio Vivarini and the woodcarver Giovanni d'Alemagna to construct the polyptych dating 1443 and representing the Virgin and the Child with four Saints, painted in tempera on wood (the lateral panels are NG 768 and NG 1284).³¹ Returning to Maginnis' analysis, examination of the top verso of Ambrogio Lorenzetti's panel reveals that it was composed of separate elements, so that it was easier to handle during production and delivery.³² These last two cases presented by Maginnis are methodologically very important, because information about handling and transport is obtained by close inspection of the paintings and interpretation of the technical evidence. Analysis and observation of paintings, together with archival research, are indeed essential tools with which to conduct my research. In some cases, documented arrangements for transporting sculpture can be useful analogies for the study of transport of paintings.³³ I mentioned paintings transported in separate pieces to be assembled at destination. Moreover, this transport strategy was often adopted also for large-scale sculptures too. As an example, I quote here below the Grand

³⁰ For Ugolino di Nerio's altarpiece and its construction, see Gordon, D., Reeve, A. 'Three Newly-Acquired Panels from the Altarpiece for Santa Croce by Ugolino di Nerio', *National Gallery Technical Bulletin* Vol. VIII, (1984) pp. 36–52.

³¹ In fact, a dowel hole is visible on both sides of the central panel that was exhibited at "I Vivarini. Lo Splendore della Pittura tra Gotico e Rinascimento" at Palazzo Sarcinelli in Conegliano (20th February - 5th June 2016). The central panel is now housed in the Museo Diocesano of Padua.

³² Hayden B. J. Maginnis, *The World of the Early Sienese Painter*, (The Pennsylvania State University Press, 2001), pp. 155-156. While Maginnis investigates the painting practice in Siena, Christoph Merzenich is interested in fifteenth-century Florence, and his doctoral thesis provides some information about transport: Christoph Merzenich, *Vom Schreinerwerk zum Gemälde : Florentiner Altarwerke der ersten Hälfte des Quattrocento : eine Untersuchung zu Konstruktion, Material und Rahmenform* (Berlin: Gebr. Mann, 2001), pp. 67-70.

³³ Regarding the transport of sculpture in Early Modern Italy, I wish to mention here a suggestion received from Christa Gardner von Teuffel about an interesting topic that would deserve more attention: the transport of sculpture - marble in particular - in Renaissance Genoa. Another case study worthy of attention is Leone Leoni and the transport of his marble sculptures by artisans specialised in the transport of this heavy material.

Duke of Tuscany's words regarding the transport to Spain of an equestrian monument made by Giambologna (and finished by Pietro Tacca) representing the King of Spain Philip III; the sculpture, intended to be an impressive state gift, is discussed in the letter addressed to Sallustio Tarugi, Ferdinando's ambassador at the Spanish court, and dated December 22nd, 1604:

"[...] We liked very much your suggestion to have Giambologna make a bronze horse for His Majesty, and we would like you to try to find out what His Majesty would prefer in terms of the size and the design of the horse and of the statue, because if he would like one like ours, it could be ready in two years, and also to send it to Alicante, but considering the difficulty in sending a machine like this by land, it might be necessary to make it in several pieces and then have it put together on site. The horse should be cast in one piece and then cut up in pieces, to then reattach them there, but it is a good idea to speak first with the Duke of Lerma or the Count of Villalonga when it seems appropriate, and to understand well the wishes of the King, since it will cost very much money, and then, if he didn't like it, it wouldn't be worth anything."³⁴

The entire shipping operation (costs for 11,400 lbs of material, labour and transport in five carts and a galley) was enormously expensive for the Grand Duke. In the end, the monument was cast in different pieces in order to facilitate its transport. A large Florentine entourage accompanied the monument during the long journey; it was their task to formally present the gift, assemble the pieces and make any repairs in case of damage. Costs also ran up quickly for the three months of delay caused by the difficulty in finding cart drivers willing to undertake the job.

None of the studies mentioned above is specifically devoted to the transport of paintings on canvas. As noted, canvases in Renaissance Venice could have been peculiar objects to handle, due to their unusual width and the physical access barriers of the city. Compared to large-scale panel works,

³⁴ Archivio di Stato, Florence, Mediceo del Principato 5050. 103v. December 22, 1604, Letter from the Grand Duke to Sallustio Tarugi, in K. Helmstutler Di Dio (2013), p.181.

canvas paintings were generally easier to move around, and large canvases could be rolled up, as Giorgio Vasari writes in 1568.³⁵

The previously mentioned article published in 1978 by Arthur Lucas and Joyce Plesters in the *National Gallery Technical Bulletin* focused attention on the problem of rolling up canvases for transport.³⁶ Their study is a detailed report on the condition of Titian's *Bacchus and Ariadne* before and after the authors' restoration work carried out in 1967-1968 in the National Gallery Conservation Department. The article has played a fundamental role in my research, since it focused first on a painting on canvas, not only to show that it is possible to identify and analyse the damage of rough transport on a canvas' surface, but also to remind us that the transport operations can be facilitated by specific choices made during production. The essay highlights how one of the most remarkable factors of damage was the rolling up of the canvas. The damage is described as "vertical cracks and horizontal cleavage in a rather brittle material similar to gesso."³⁷ We know that Titian started this work in Venice and finished it in Ferrara. According to the authors, *Bacchus and Ariadne* had probably been rolled up a first time between 1522 and 1523 to be shipped from Venice to Ferrara, and again in 1598 to be shipped to Rome. In my view, it would be interesting to understand whether the painting was rolled up when Titian painted it in 1522-1523, and if it was damaged on its arrival in Ferrara. More generally, it is important to clarify whether the damage of rolling-up depends also on whether a painting is rolled up immediately after its execution or some decades (or centuries) later. If so, how is the damage different? A clarification about this procedure and its consequences on paintings would be essential to better understand when a painting had been rolled up in its past. If we assume that the painting had been rolled up in 1522-1523, maybe the painter had to repair it in Ferrara. Can we suppose that damage was limited because the materials were still

³⁵ I discuss Vasari at length in Chapter II, in the section entitled "Precious Historical Sources and Various Scholars' Opinions". Giorgio Vasari, *Le Vite de' più eccellenti pittori, scultori ed architetti* (1568), redazione del 1568, Gaetano Milanesi (ed.), (Florence: Sansoni, 1878-85), tomo I, p. 188.

³⁶ A. Lucas, J. Plesters (1978), pp. 25-47.

³⁷ The painting is an oil on canvas of quite large dimension (175.2 x 190.5 cm), and rolled-up it was easier to transport. A. Lucas, J. Plesters (1978), p. 27.

very fresh? The cracks and cleavage observed in 1969 could have been caused during later transport, when ground and pigments were completely dried-out. Hopefully, original documentation and new technical evidence about *Bacchus and Ariadne* will help us understand how the painting had been transported in Titian's time. The original canvas that Titian received from Alfonso d'Este for *Bacchus and Ariadne*, is "remarkably thin and finely woven, considering the relatively large size of the picture."³⁸ Such features might also have been intended to facilitate its transportation to Ferrara. A little earlier Andrea Mantegna certainly believed this to be the case when he wrote to his patron the marquises of Mantua presenting him with technical options.³⁹

Another important aspect published in 1978 concerns the preparation that Titian used on the *Bacchus and Ariadne* canvas. Technical analysis demonstrated that the painting ground consists of a very thin layer of plaster. Since the painting was intended to be shipped to Ferrara, could this thin layer of plaster represent a conscious choice by Titian, in order to make his canvas more flexible for rolling up? The question has still to be answered, and the problem of preparing the canvas with the best ground for rolling-up will be presented in Chapter II. However, it is worth mentioning that both Giorgio Vasari and Giovanni Battista Volpato suggest different solutions for the best painting ground to be used on canvases destined for transport.⁴⁰ The thin layer of gesso suggested by Volpato seems to reflect Titian's practice on *Bacchus and Ariadne*. This example shows quite clearly the advantage of analysing the scattered historical documentation together with the material condition of the artwork. Indeed one of the major aims of this thesis is to confirm how the gaps in historical records can be sometimes filled with the

³⁸ Jill Dunkerton (1999), p. 38, fig. 37.

³⁹ The relevant excerpt of this important text will be presented and discussed in Chapter II. It is a letter written by Andrea Mantegna to the marquises of Mantua on July 6th, 1477. See Creighton E. Gilbert, *Italian Art 1400-1500: Sources and Documents* (Evanston, Illinois: Northwestern University Press), p. 12.

⁴⁰ Giorgio Vasari suggests preparing the canvas with a mixture of flour and walnut oil (1568), Tomo I, p.188. Giovan Batista Volpato wrote his treatise *Modo da tener nel dipinger* at the end of the seventeenth century. The text of the treatise can be found in Mary P. Merrifield, *Medieval and Renaissance Treatises on the Art of Painting, original texts with English translations*, first published in 1849 by John Murray, London. Dover Publications, 1967 (unaltered republication in 1999), pp. 727-755. The recipe of the thin gesso layer can be found on p. 731.

careful observation of the paintings themselves, and how this combination of approaches can lead to the best starting point for further research.

The increased interest in the process of packing and in transport procedures in past centuries is demonstrated by the organisation of seminars like “The Art of the Box”, held at Waddesdon Manor in October 2017. The conference covered several topics, all related to the transport of precious objects, but the talks that proved most helpful were *Trunks, Cases and Cabinets for Royal Furnishing and Household Goods, 1660-1714* by Olivia Fryman, and *Fit for the Cart, the Battleship and the Palace: Boxes for Silver in Stuart and Georgian Britain* by James Rothwell. For the occasion, boxes from the collection at Waddesdon Manor were displayed (Fig.1).

During this doctoral research I also came across curious information about different transportation procedures. For instance books were, at least sometimes, transported in barrels.⁴¹ Another curious bibliographic reference regards safe transport of glass panels (very fragile objects and not easy to deliver intact): “a verre églomisé panel (NT 1128215), which is probably identifiable in the 1601 inventory as ‘A glass with his [6th Earl of Shrewsbury] and my Ladies armes in it’, was listed with the pictures in the Low Great Chamber. The ebonised cassetta frame is unique at Hardwick and is a great rarity, given the presence of a slot in the top of the frame which allowed a wooden panel, now missing, to be inserted as protection for the glass.”⁴² Another noteworthy piece of information about packing procedures is the practice of rolling paintings in Persian rugs by Venetian merchants, in order to secretly export them for trade.⁴³

⁴¹ The source for this is a book of correspondence between Johann Amerbach, a printer and book publisher in Basel, and his business partners, including the well-known Nuremberg printer Anton Koberger. Johannes Amerbach and Barbara C. Halporn, *The Correspondence of Johann Amerbach: Early Printing in its Social Context* (Ann Arbor: University of Michigan Press, 2000).

⁴² David Adshead, David A.H.B. Taylor, *Hardwick Hall: a great old castle of romance* (Yale University Press: New Haven, 2016), Appendix 4, p. 339. For this reference, I would like to thank Christopher Rowell, Furniture Curator at the National Trust, who mentioned to me what is written about a peculiar verre églomisé preserved at Hardwick Castle.

⁴³ Bernard Aikema, Rossella Lauber, Max Seidel, *Il Collezionismo a Venezia e nel Veneto ai tempi della Serenissima* (Marsilio: Venezia, 2015). This information was kindly passed along by Thomas Dalla Costa.

Throughout centuries the search for easy, cheap and safe methods of transportation for large diversity of goods stimulated the improvement of sophisticated transport techniques, as well as the preservation of very simple but effective procedures. Some transport procedures are still a mystery to scholars. For example, no documentation apparently supports the practice of transporting objects made of glass immersed in butter.⁴⁴

By contrast, a very simple and very well documented transportation technique concerns the timber trade. Thanks to the great number of studies carried out about lumber commerce between Venice and Cadore, we know that timber was collected and rolled downstream (floated?), where it was finally loaded on to boats and transported by river. It is well known, indeed, that Titian owned sawmills and warehouses that were managed by his brother Francesco. Moreover, he was clever enough to avoid to paying taxes on lumber, thank to his painting activity in favour of Ferdinando del Tirolo. This case study clearly shows the strong connections between art history and other disciplines (in this case economic history), and it gives us a rare opportunity to link our vision of a famous Renaissance painter to a broader and richer historical context.⁴⁵ These few, salient examples illustrate the surprising and vast amount of information to be gathered simply by interacting with other scholars and researchers.

⁴⁴ I wish to thank Catherine Spirit who works on glass at York University for discussing the matter with me. She is unaware of any reference for this procedure.

⁴⁵ I thank Giorgio Tagliaferro for alerting me to this. See Giorgio Tagliaferro, Bernard Aikema, with contributions by Matteo Mancini and Andrew John Martin, *Le Botteghe di Tiziano* (Alinari: Florence, 2019), especially the chapters 2.2, 2.4, where Tagliaferro discusses Francesco and Orazio Vecellio; Lionello Puppi, *Tiziano fa lo Sconto*, in "Stile: Mensile d'Arte", n XII, 108, pages 40-44; *Lungo le Vie di Tiziano: i luoghi e le opere di Tiziano, Francesco, Orazio e Marco Vecellio tra Vittorio Veneto e il Cadore* (Mazza: Milano 2007), pages 94-99; Lionello Puppi, *Per Tiziano* (Skira: 2004), p. 46; Giorgio Tagliaferro, *Regesto di Orazio Vecellio*, in "Studi Tizianeschi", VIII (2011), pages 68-98; Giorgio Tagliaferro, *Clientele cittadine, affari privati e produzione di bottega: Tiziano e i Balbi dal Legname, Venezia Cinquecento*, 41 (2011), pages 107-161; Katia Occhi, *Boschi e Mercanti. Traffici di Legname tra la Contea di Tirolo e la Repubblica di Venezia (secoli XVI-XVII)*, (Il Mulino: Bologna, 2006); Katia Occhi, *Commercial Networks from the Alpine valleys to the Mediterranean: the Timber Trade Between Venice and Malta (16th-17th centuries)*, "Studi Veneziani", 67, 2013.

Thesis Structure

Chapter I offers, for the first time, a presentation of the Venetian guilds involved in transportation activities in Late Middle Ages and Renaissance. Chapter II focuses on the painting practice itself, and on the artists' choices for a safer and easier transport of their products, especially large-scale paintings. Chapter III presents a selection of archival documents that are relevant for the study of transport and packing procedures carried out by several artistic workshops in Late Middle Ages and Renaissance (mainly Venetian). Finally, Chapter IV takes in consideration a group of large-scale paintings preserved in The National Gallery of London with the aim to shed light on the physical damage that bad transport procedures can cause to artworks. It is followed by general conclusions. Appendix I presents several conversations about transport of paintings that I had with restorers and other experts in the field in Venice, London and Florence. Appendix II consists of a database that allows an easier reading of the information that I collected in Chapter IV, about the paintings in The National Gallery.

Chapter I - Guilds involved in Packing and Transportation of Goods in Renaissance Venice

Introduction

We know of at least 203 documented guilds throughout the history of the Venetian Republic, each of them with its own regulation. The most ancient statute to survive belonged to the brotherhood of tailors, and it was written in February 1219. In the late thirteenth century, 56 guilds were officially registered with the *Magistratura della Giustizia Vecchia*, the Venetian institution responsible for the corporations. The number of guilds increased in the following centuries. Archival documents testify to the creation of nine new companies in the fourteenth century, fifteen in the fifteenth century, twenty in the sixteenth century, thirteen in the seventeenth century, and six in the eighteenth century.⁴⁶ After 1530, many of their statutes (called *mariegole* in Venetian) were revised by the *Cinque Savii sopra le Mariegole et Mestieri*, whose documentation is preserved in the *Capitolar Rosa*.⁴⁷ The board of *Cinque Savii* were created by the *Consiglio dei Dieci* in 1530, and they were elected among the members of the *Senato*.

In this section I relate the Venetian guilds that were involved in many ways in packing and transportation of goods during the history of the Republic. Some of them date back to the thirteenth century or earlier, while others were established later. This list of corporations confirms that Venice in the Renaissance was a lively city, with a constant movement of goods and

⁴⁶ Detailed information about Venetian guilds can be found in Antonio Manno, *I Mestieri di Venezia. Storia, Arte e Devozione delle Corporazioni dal XIII al XVIII Secolo*, (Biblos: Padua, 1995). Among the guilds involved in transportation, we find potable-water porters (*acquaroli*), 28 guilds of boatmen, charcoal porters, but we do not find guilds of packers (*ligadori*), guilds of porters (*bastasi*), wine porters, and makers of material used in packing (*casseleri, strengheri, fustagneri etc...*). For the Venetian guilds, other important studies include: Tomaso Garzoni, *La Piazza Universale di tutte le Professioni del Mondo*, edited by Giovan Battista Bronzini, (Leo S. Olschki Editore: Firenze, 1996); Francesco Grisellini, *Dizionario delle Arti e dei Mestieri*, in XV volumes, (Appresso Modesto Penzo: Venice, 1773); Giovanni Marangoni, *Le associazioni di Mestiere nella Repubblica Veneta (vittuaria, farmacia, medicina)*, (Filippi Editore: Venezia, 1974). For the original *mariegole* preserved in the Correr Library, see the catalogue by Barbara Vanin, Paolo Eleuteri, *Le Mariegole della Biblioteca del Museo Correr*, (Marsilio: Venezia, 2007).

⁴⁷ A. Manno (1995), p. 24.

workers.⁴⁸ Venice had its professional packers, and various guilds of porters and boatmen.

In the course of this study we will see that, outside Venice, waterway transport was preferred in many cases. However, within the city, walking was prevalent. To quote Filippo de Vivo's words about Renaissance Venice:

"[...] its peculiar geography presented particular challenges to walking but also made walking prevalent, not least because animal transportation was negligible and boats were costly and could only ever take one part of the way."⁴⁹

Apart from porters and boatmen, other guilds were in charge of the production of materials useful for packing. In my archival research on the statutes of these companies, I found some significant passages that can be helpful to understand how packing and transportation were carried out in Venice during the fifteenth and sixteenth centuries. Paintings on wood and canvas were just one of the many products to pack and move within a wider system of commerce. In the statutes that I inspected, I found no explicit reference to packing and transportation of paintings, not even to the handling of artistic objects in general. In the course of this "catalogue of guilds", I will mention a few documented instances of the transport of paintings, when these are instrumental to understanding the activity of the guilds. However, in a later section of the thesis, I will offer a collection of archival documents, specifically related to packing and transportation of Venetian paintings in the Renaissance. In many cases, this kind of information can be found in the

⁴⁸ For further investigations of the Venetian context, Dr. Rosa Salzberg recommended to me the following bibliographical references: Filippo de Vivo (Birkbeck, University of London), *Walking in Sixteenth-Century Venice: Mobilizing the Early Modern City*, *I Tatti Studies in the Italian Renaissance*, 19 (2016): 115-141; Daniel Savoy, *Venice from the Water*, *Architecture and Myth in an Early Modern City* (New Haven, Conn: Yale University Press, 2012). Another interesting historical source: Fynes Moryson (1566-1630), who spent most of the decade of the 1590s travelling on the European continent and in the eastern Mediterranean lands, and he wrote about it later in his multi-volume *Itinerary*, a work of value to historians for its picture of the social conditions existing in the lands he visited.

⁴⁹ F. de Vivo (2016), p. 119.

written agreements between the painters and their clients, and also in notes written by painters for their own use.

I.1 Professional Packers

***Ligadori de Comun*⁵⁰ between official and illegal packing activities**

Ligadori is the Venetian word for the Italian term *legatori*⁵¹, and they were Venetian professional packers (fig.2).⁵² The terms *de Comun* may depend on the fact that their service was always available for merchants and private Venetians.⁵³ It is not clear when this guild had been instituted. Their devotional church was San Giacomo of Rialto, in sestiere San Polo, where they had an altar dedicated to the Virgin of the Annunciation on the right wall (renovated soon after 1600). *Ligadori de Comun* shared their devotional practices with the guild of *garbelladori* or *crivelladori*, public inspectors of wheat, as it is visible in their emblem sculpted in the Church of San Giacomo of Rialto (fig.3). The lower half of the emblem represents a bundle of goods wrapped in cotton fabric, and tied up with ropes. In the centre of the emblem there are two long tools, perhaps used in packing to sew fabrics and ropes around the bundle. In this case, the packed goods could be wheat, due to the association with the guild of public inspectors of grains. From various sources, we know that the guild of *ligadori de comun* also packed other types of wares, but the competition with the other guilds was always fierce. Giovanni Marangoni writes that originally *garbelladori* and *ligadori de comun* were chosen among the most skilled members of the corporation. Later, sons and nephews of the members were admitted to the guild. Gradually, Venetian merchants preferred to hire their own servants and assistants for packing operations. For this reason the *Maggior Consiglio* ordered the hiring only of

⁵⁰ A. Manno (1995), p 161.

⁵¹ From the verb *legare* (to tie).

⁵² Illustration from Giovanni Grevembroch, *Gli abiti dei Veneziani di quasi ogni età con diligenza raccolti e dipinti nel secolo XVIII* (Filippi Editore: Venezia 1981), vol. III, table n. 61.

⁵³ G. Marangoni (1974), p. 65, table IV.

professional packers approved by the *Comune*, and established a price list for packing services.⁵⁴

I found an interesting reference to the activity of *ligadori de comun* in the *mariegola* of *fustagneri*, Venetian producers and merchants of cottonwool and fustians.⁵⁵ The statute is a faithful copy of a previous version dated back to 1502. The guild of *fustagneri* complained about the disadvantageous interference of *ligadori de comun* in their own activity. In fact, every time that *fustagneri* were about to ship their fabrics to a fair, the *ligadori* came to pack the fabrics, and asked to be payed for their work. The disadvantage for *fustagneri* consisted in the fact that usually, at the end of fairs, about two thirds of their fabrics remained unsold, and were brought back needlessly packed. *Fustagneri* asked for the permission to pack, load and unload their own products themselves. These tasks could be easily carried out, as they say, by their sons and workshop assistants (*figlioli e garzoni*):

“...each of us merchants of fustians and blankets (asks to) be able to tie our things for fairs on our own with our sons, or workshop assistants, and to load and unload them for every fair where we want to go, without any cost of the said *ligatori*.”⁵⁶

This document helps us to understand the activity of Venetian *ligadori*, who officially were the only ones in charge of packing goods. At the same time, the document suggests that the various workshops might have taken care of the packing illegally, in order to save some money. As for paintings, I suppose that a similar situation might have occurred: professional packers were intended to take care of paintings for export, but maybe they had to overcome

⁵⁴ G. Marangoni (1974), p. 67. Marangoni does not specify the year of this decree, he only writes that this happened when merchants started to misuse their own assistants and sons. I suppose that the date can be around 1424, and that Marangoni is referring to the price list written in the *mariegola* of *Ligadori del Fontego dei Tedeschi* (see next pages).

⁵⁵ Reference to *fustagneri* can be found in A. Manno, (1995), p 156. The *mariegola* that I inspected is preserved in the Correr Library as BMC, CL. IV, 1.

⁵⁶ “...cadauno de noi mercadanti del mestier di fustagni e coltre possiamo ligar le nostre robbe preparade per fiere nui medemi cum i nostri figlioli, over garzoni de bottega, e quelli cargar, e discargar per ogni fiera, che se vorra andar senza spesa alcuna de ditti ligatori.”

the competition of the painter's sons and assistants in the workshop. An analysis of documentation about painters' activity will help me to establish if this was the case.

Ligadori del Fontego dei Tedeschi⁵⁷

The *Ligadori del Fontego dei Tedeschi* formed another corporation, completely independent from the guild of *Ligadori de comun*. The guild was created on June 1, 1418 for devotional purposes initially, and on March 10, 1423 it became a real trade school. The *Ligadori del Fontego dei Tedeschi* were all German, elected exclusively by the *Nazione Alemanna* in Venice. Since 1232 the *Fontego dei Tedeschi* was administrated by the power of three *Visdomini*, and for this reason the guild is first mentioned in the *Capitolare dei Visdomini*. Their devotional church was the Dominican church of San Giovanni e Paolo (*San Zanipolo*), in sestiere Castello. Since 1419 they had an altar dedicated to the Holy Trinity, and located in the first chapel of the left transept (figs. 4 and 5). The chapel still houses the burial space of the *Ligadori del Fontego dei Tedeschi*, as can be read in the stone on the floor in front of the altar:

‘sepoltura de ligadori
de Fontego de Todeschi
adi Prima Marzo 1428’.

Below the inscription, in very poor state of conservation, are carved the symbols of the guild: a bundle of wares, and two iron tools (figs. 6 and 7). These symbols, better preserved, are also sculpted on both sides of the stone frame of the altar (fig. 8). The mystery of the Holy Trinity is represented in the chapel altarpiece by Leandro Bassano, and in the first page of the

⁵⁷ A. Manno (1995), p. 104-105; G. Marangoni (1974), p. 68.

mariegola of the guild, preserved in its original version at the Correr Library, where I inspected it.⁵⁸

The first page (f. 1v, fig. 9) is decorated with a full-page illustration of the Holy Trinity: God the Father sustaining the Crucifix, in presence of the Holy Dove. The vine sprouting around the columns of the architectural frame is a symbol of the Passion of Christ but, in my opinion, it could be also an allusion to the packing activity of the guild. On the second page (f.2r, fig.10) there are three little scenes with *ligadori del Fontego dei Tedeschi*. In the upper part of the frame a *ligadore* is driving a golden cart, loaded with bundles of wares, and pulled by three running horses towards a town. The goods are wrapped with white fabric, and the bundle is tied with a net of ropes (fig. 11). The same packed items appear inside the letter “Q”, where two *ligadori* are at work in the *Fondaco dei Tedeschi* (fig.12). The third illustration, in the bas de page, represents two bearded *ligadori* kneeling and praying next to the usual bundles. From the sky, God the Father blesses them and their wares, and the scene is taking place in a countryside close to the sea (fig. 13).

This *mariegola* dates back to the 1418, and is composed of 55 chapters, most of which define the rules of the community. First of all, *Ligadori del Fontego dei Tedeschi* must be German, since they served German merchants during their business in Venice. The guild could not count less than 18 members, who could not get married without approval of the brotherhood. Chapters regulate the maintenance of the altar, the agreements with the Dominican friars, the assistance to invalid members, the organisation of funerals, the policy in case of fights and disobedient brothers. A few chapters concern, more specifically, their activity as professional packers.

⁵⁸ BMC, Cl. IV, 85; (1418, June 1; 1418-1709). For the catalogue entrance, see B. Vanin, P. Eleuteri (2007), p. 59, n. 85. Bibliography: Cicogna, IV, 225v-226v, Simonsfeld, I, XIV, 163-168, 176, 200, 287-289, 327-328 (edition of some chapters); Bratti, *Notizie d'arte*, 443; Marangoni, 67-68; Manno, 105; Raines, 174; Zanelli, *Statuto*, 319 n.20; Vio, 178 (entitled *Scuola della Santissima Trinità, dei Ligadori del Fontego dei tedeschi*); Dondi, 256 n. 84; C. Wirtz, “*Mercator in fontico nostro*”. *Mercanti tedeschi tra la Germania e il Fondaco dei Tedeschi a Venezia*, in *Presenze tedesche a Venezia*, a cura di S. Winter, Roma 2005, 11 n. 61. To my knowledge, these two illuminated pages have not been published yet. They are not included in the book by Federica Toniolo and Gennaro Toscano, *Miniatura. Lo Sguardo e la Parola, Studi in onore di Giordana Mariani Canova*, (Silvana Editoriale: Cinisello Balsamo, 2012), suggested to me by the Correr Library's staff. They are not included in Lyle Humphrey, *La Miniatura per le Confraternite e le Arti Veneziane, Mariegole dal 1260 al 1460*, (Cierre Edizioni: Verona, 2015).

Chapter XXXVII, dated March 1, 1424, fixes a price-list for the services that *ligadori* offer to merchants (*De la limitation de la nostra mercede de nui ligadori del fontego de todeschi la qual debiamo havere da li marchadanti*). The units of measure used in packing are burden (*soma*), bale (*balla*), barrel (*botta*, *bota*), cotton sack (*sacco de goton*), amphora (*anfora*) and trunk (*cassa*). Sometimes trunks, amphoras and barrels are wrapped in rags (*stuore e chanevaça*). *Ligadori* were in charge of *imbottar*, *imballar*, *insachar*, and *cusir la chanevaça*, that means to sew a rag around a container to better protect the content.⁵⁹ The wares packed are mostly food, like sugar (*per un barile de polvere de zuicharo*), cinnamon (*per una cassa de canella*), raisin (*uva passa*), wine (*per una una botta de vin ligada con un sacco de coton in torno*), wheat, but also soap (*per una bota de savon*) and bundles of wood (*legniam*). In my footnote I offer a transcription of the price-list (fig. 14).⁶⁰

⁵⁹ A. Manno (1995), pp. 104,105.

⁶⁰ Questa è la limitatione cap(itolo) 37.
 Per una balla de lire 2800
 infina 3000 haver si debia
 lire cinq(ue) e P(iccoli) sei, lir(e) V P(iccoli) VI.
 Per una balla de lir(e) 2000, lir(e) 3 P(iccoli) 10.
 Per meza balla che se intende de pe
 so lire 1500, lir(e) II P(iccoli) 16.
 Per una balla de lir(e) 1200, lir(e) II P(iccoli) 6.
 Per una soma de penere lir(e) I P(iccoli) 4.
 Per una soma de bobaso, lir(e) I P(iccoli) 12.
 Per una soma de conini, lir(e) I P(iccoli) 12.
 Per una bota de savon over de le-
 gname de lir(e) 1000, lir(e) 0 P(iccoli) 12.
 Per una bota de fige overo de uva
 passa de lir(e) 1000, lir(e) 0 P(iccoli) 14.
 Per de savon e legniam, fige e
 uva passa, soma una, lir(e) I P(iccoli) 4.
 Per una botta danfora ligada in
 stuore e chanevaça, lir(e) 3 P(iccoli) 12.
 Per una botta de vin ligada con un
 sacco de goton in torno lire 2 P(iccoli) 10.
 Per meça botta ligada in stuore
 e chanevaça, lire 0 P(iccoli) 6.
 Per un barile de polvere de zui-
 charo, e per una cassa de canella a
 cosir a torno la chanevaça, lir(e) 0 P(iccoli) II.
 Per cadauna boletta over some
 che non sono notade (notade) qui
 suso, e sia de che marchadantia si
 voia, habia secondo el peso, e come
 se trovera el lavorier essere.

I would like to thank Cecilia Muratori for her essential advice on this transcription, and for the reference of Lorenzo Tomasin, *Testi Padovani del Trecento*, (Esedra: Padova, 2004).

Naturally, the *Ligadori del Fontego dei Tedeschi* held a monopoly on packing goods for German merchants. Their activity had to be carried out inside the *Fondaco dei Tedeschi*. However, in case German merchants needed a packing service outside the *Fondaco*, *ligadori* could ask for a license from the *Visdomini*. The packing procedures were directed and supervised by the *gastaldo*, at the presence of specialised agents, who had to check the weight and quality of the wares. The earnings of the guild had to be deposited in a common register (*descho de la compagnia*), in order to avoid fraud to the detriment of both *ligadori* and merchants. *Ligadori* even had their own inn: documents produced by the guild of *bastioneri* (innkeepers) inform us that the *Fontego dei Tedeschi* housed an inn, that was allowed to sell wine only to German merchants and workers of the Fontego.⁶¹

Pesadori and Crivelladori⁶²

The guild of *pesadori and crivelladori* (agents appointed to the weighing and sifting of wares), as well as the guild of *bolladori* (agents in charge to apply stamps and seals), were closely connected with *ligadori*.⁶³ *Pesadori and crivelladori* weighed wool, linseed, cheese, sugar, ash, raisin, cattle, and inspected wheat and legumes. Their church was S. Stefano, in sestiere S. Marco, and they were devoted to the Holy Virgin of Loreto. Their *mariegola* also contains the statute of *pesadori de comun*.⁶⁴

⁶¹ ASV, Arti, b. 405 ter, see A. Manno (1995), pp. 104,105. An essential study on the Fondaco dei Tedeschi is Henry Simonsfeld, *Der Fondaco dei Tedeschi in Venedig und die Deutsch-Venetianischen Handelsbeziehungen: Quellen und Forschungen*, (Verlag Der J. G. Cotta'schen Buchhandlung: Stuttgart, 1887).

⁶² A. Manno (1995), p. 161.

⁶³ An already mentioned case demonstrating the strong relations between these corporations, is that of the guild of *garbelladori* (public examiners of wheats). They were associated with *ligadori de comun*, with whom they met in the church of S. Giacomo of Rialto. For their unique emblem, see previous pages.

⁶⁴ BMC, Cl. IV, 88 (16 May 1747, containing chapters related to *pesadori de comun*, 1485-1791).

Pesadori de Comun⁶⁵

Pesadori de comun formed another guild of Venetian weighers. They were public agents, and their service was called *Ufficio della bilancia* (*stagiera* or *stadera* in Venetian). Their first statute dates to before 1261, and their church was S. Giovanni Elemosinario, in sestiere S. Polo.⁶⁶

I.2 Producers of Material used in Packing

Casseleri

Simple wooden trunks were often used in shipping. For example, canvases by Titian shipped to Philip II, King of Spain, were rolled up and packed in chests ('muy bien enbolber y ponere en sus caxas').⁶⁷ The only reference that I found to production of trunks in Venice is the guild of *casseleri*. They were the Venetian makers of wooden containers, trunks for wares and marriage chests. Their statutes are preserved in the Venetian State Archive, in a book dated 1619⁶⁸, but the guild has more ancient origins. In 1424, their place of congregation was a little chapel between the church and the bell tower of Santa Maria Formosa, in sestiere Castello. After a fire, the chapel was incorporated into the new Oratory of Santa Maria della Salute, built in 1833.⁶⁹ The patron of the guild was St Joseph, who was himself a carpenter. In the course of my inspection of the *mariegola dei depentori*, I found a quarrel

⁶⁵ G. Marangoni (1974), p. 67; for the catalogue entrance of the *mariegola* see B. Vanin, P. Eleuteri (2007), p. 61, n. 88.

⁶⁶ Giovanni Monticolo, *I Capitolari delle Arti Veneziane sottoposte alla Giustizia e poi alla Giustizia Vecchia dalle origini al MCCCXXX*, in III volumes, (Forzani e C. tipografi del Senato: Roma 1905), vol. I, pp. 181,182. For archival material about *pesadori de comun*: ASV, Arti, b.438 (1556-1804); already mentioned BMC, Cl. IV, 88 (statute of *pesadori* and *crivelladori*, with chapters related to *pesadori de comun*, 1485-1791).

⁶⁷ Letter written in Ghent by King Philip II to García Hernández, on 13 July 1559. The translation of the passage could be "roll them up very well, and put them in their cases". Matteo Mancini, *Tiziano e le corti d'Asburgo nei documenti degli archivi spagnoli* (Istituto Veneto di Scienze Lettere e Arti: Venezia 1998). p. 252.

⁶⁸ ASV, Arti, b.93 (libri diversi, 1619-1719).

⁶⁹ A. Manno (1995), p.162.

between *depentori* and *casseleri*. The problem was that, sometimes, *casseleri* not only produced wooden trunks, but also painted them, infringing on the work of the painters.⁷⁰

Filacanevi⁷¹

Two materials that *ligadori* commonly used in packing were ropes and cotton fabrics. Visual evidence of this are the illustrations of the statute of *Ligadori of the Fontego dei Tedeschi*, where the bundles wrapped in white fabrics are tied with ropes. Venetian producers of ropes were called *filacanevi*. Their statute dates back to 1233⁷², and their church was SS. Biagio and Cataldo in sestiere Dorsoduro, demolished in 1882. In a trial dated September 10, 1537, the *gastaldo* of the guild of *filacanevi* accused a *frutariolo* (seller of fruits) of illegally selling twine. The *frutariolo* defended himself, saying that he needed twine and rope to sew and tie his sacks of fruits.⁷³ Once again, it is clear that many merchants and artisans carried out packing operations themselves. This trial shows that the market of ropes was protected by law and, at the same time, illegal buying and selling was a common practice in the city.

Fustagneri and Coltreri

Cotton fabrics were produced and sold by the guild of *fustagneri and coltreri*, founded on February 12, 1503.⁷⁴ The church of the guild was S. Bartolomeo (*Bortolomio* in Venetian), and the altar was dedicated to S. Elena or to the Holy Cross. *Fustagneri and coltreri* also produced cottonwool, that was used to stuff the trunks in order to protect the content. Records about the wooden painting transported by Michele Giambono and Paolo di Amedeo from Venice

⁷⁰ *Mariegola of Depentori*, BMC, Cl. IV, 163. The chapter is the number 52 (7 October 1482), ff.57v - 58r.

⁷¹ A. Manno (1995), p. 63.

⁷² ASV, Arti, bb.113-145. Transcribed in G. Monticolo (1905), vol I, pp. 95-113, pp. 235-256 and pp. 404-405.

⁷³ ASV, Arti, b. 752, chapter 54.

⁷⁴ G. Monticolo (1905), vol. II, pp. 535-581 and pp. 677-681; A. Manno (1995), p. 156. The statute is preserved in BMC, Cl. IV, 1 (1503-1778).

to San Daniele del Friuli in 1444, prove the use of cottonwool for packing paintings. In fact, the altarpiece had been carried in a case stuffed with cottonwool (*tam capse quam bombicis*).⁷⁵ The term *bombicis* used in the document derives from the Venetian *bombàso*, dialectal form for *bambagia* (cottonwool).⁷⁶

Stringheri

In a water-based city, the use of ropes was essential. Still, another material that could have been used for packing was animal leather. Venetian *stringheri* were producers of laces (*stringhe*). They were part of *marzeri* (merchants of fabrics, silks, and various other products). In turn the guild of *marzeri* were comprised of *telarioli* (sellers of canvas), *battioro stagnoli e da colori* (producers of reflecting sheets for mirrors, and colours), *corteleri* and many other groups.⁷⁷ The church of *stringheri* was San Giuliano (*Zulian* in Venetian) and their altar was the second on the right wall. Their statute dates back to 1506, and was renewed in 1570. I have inspected their *mariegola* preserved in the Correr Library: it does not contain any illustration, and the main concern of the guild was the protection of Venetian laces against foreign productions (*stringhe forestiere*).⁷⁸

⁷⁵ V. Joppi, *Di alcune opere d'arte in San Daniele del Friuli. Inediti documenti*, in "Archivio veneto", XXXI, 1886, pp.468-469; T. Franco, *Michele Giambono e il monumento a Cortesia da Serego*, Padova 1998, pp.87 and 222-223.

⁷⁶ Giuseppe Boerio, *Dizionario del Dialecto Veneziano*, (Premiata Tipografia di Giovanni Cecchini Editore: Venezia, 1856). p. 89.

⁷⁷ A. Manno (1995), p. 97.

⁷⁸ BMC, Cl. IV, 76 (1506-1690). Some extracts from the *mariegola* are in BNM, Cod. It.VII, 1462 (9353), that also contains a copy of the nineteenth century (82-101v.). For the catalogue entrance of the *mariegola* see B. Vanin, P. Eleuteri (2007), p. 53, n. 76; A. Manno (1995), p. 160.

I.3 Professional Porters

Bastazi and Facchini

The guild of *Bastazi della Dogana da Mar* represented the professional porters of the Venetian Republic.⁷⁹ The word *bastazo* comes from the greek verb βαστάζω, that means “to take up, to carry”. The official *bastazi* in Venice were the porters of *Dogana da Terra e da Mar*. However, the name *bastazi* or *bastasi* was commonly used in Venice to indicate every kind of porter.⁸⁰ A very common way to name a porter was *fachìn*.⁸¹ I have found reference to Venetian *fachinj* in the documentation about Cima da Conegliano's altarpiece for the parish church of San Giovanni in Bragora, dated 1492, as well as in Lotto's account book.⁸² This record lists every stage of the transportation of the altarpiece, by boat mentioning the *fachinj* at the service of the parish church.⁸³

Bastazi e Segadori del Fontego dei Tedeschi⁸⁴

The *Fondaco dei Tedeschi* housed its own guild of porters (or *bastazi*, or *fachini*). They were also guardians of the wares in the *Fondaco*, and were associated with *segatori di legname, biade e fieno* (woodcutters and haycutters). Their altar was dedicated to S. Nicolò in the church of San Bartolomeo (*Bortolomio* in Venetian), in sestiere San Marco, rebuilt in 1723. An important visual document for *facchini* of the *Fondaco dei Tedeschi* is an

⁷⁹ A. Manno (1995), p. 160. There is no reference to the church of the guild. ASV, I.R. Intendenza di Finanza, b. 569 bis, cc. 75-76 (1641, giugno 7).

⁸⁰ G. Marangoni (1974), p. 67.

⁸¹ *Fachìn, facchino* or *fachino* means porter of weights, but also man used for various little services. The definition is given by Manlio Cortelazzo, *Dizionario Veneziano della Lingua e della Cultura Popolare nel XVI secolo* (La Linea Editrice: Padova 2010), p. 157.

⁸² See the section “The Price of Transport: Boats and Porters” in Chapter III.

⁸³ Archivio storico del Patriarcato di Venezia, APGB, Cassa-Fabbrica 1486-1498, b. 1, f. 32v. The notary is the parish priest Cristoforo Rizzo.

⁸⁴ A. Manno (1995), p. 161.

engraving dated 1616 by Raphael Custos (fig. 15).⁸⁵ Custos shows the internal courtyard of the Fondaco as a lively working space where probably, at least in the seventeenth century, German packers and porters were mutually collaborating with operations of packing and moving. Large bundles of goods are represented in three distinct stages of the packing process: some are wrapped in fabrics and not fully packed, others are undergoing the tying process with ropes, others are already packed and ready to be shipped. They look identical to the ones represented in the *mariegola* dating back to the fifteenth century. On the right, we can see one of the bundles carried by four men on their shoulders.

Transport on Shoulders

Thanks to archival records we know that once Albrecht Dürer's *Feast of the Rose Garlands* had been acquired by the Emperor Rudolph II in 1606, it was transported by *facchini del Fondaco dei Tedeschi* from the church of *San Bartolomeo* in Venice to Prague. The large wooden altarpiece was carefully "wrapped in cotton and carpets and protected by waxed cloth". Then, it was "carried with poles by strong men the whole way to the Imperial Residence in Prague".⁸⁶ Another interesting information about this shipping operation is that, after the transport via Augsburg had been planned (certainly by horse cart), it was cancelled at the last minute. The new plan was to carry the altarpiece on foot, on the direct route throughout the Alps. Perhaps this decision was taken to avoid risk of further damage, because the painting was already in poor condition in Venice.⁸⁷ Andrew John Martin, commenting these records, observes:

⁸⁵ Essay by A.J.Martin in Olga Kotková, *Albrecht Dürer, The Feast of the Rose Garlands, 1506-2006* (Národní galerie v Praze: Prague 2006), p. 255, p. 54.

⁸⁶ Letter written by Joachim von Sandrart in 1675, see A.J.Martin in O. Kotková (2006), p. 255, p. 57 and p. 67 (documentary appendix).

⁸⁷ A.J.Martin in O. Kotková (2006), p. 61. I would like to thank Dr. Giovanni Maria Fara for this reference.

“Venetian porters at that time did not transport goods on carts like their colleagues in normal cities or their followers in today’s Venice, but carried them on their back.”

And, referring to the transport of Albrecht Dürer’s *Feast of the Rose Garlands*, he continues:

“one might therefore assume that the packed painting was fixed carefully to four poles resting either on the men’s shoulders or held with stretched arms, supported by straps fixed to their necks. To guarantee the balance of the painting, the porters in charge must have been at least four, walking two by two and being relieved from time to time by four other companions, who would have also served to reinforce the convoy.”⁸⁸

Weights could also have been transported by single porters on their back. In 1590 Cesare Vecellio represents the image of a Venetian *facchino* carrying a heavy trunk on his shoulders (fig. 16).⁸⁹ I copy here below an excerpt from Cesare Vecellio’s *Primo Libro de gli habiti d’Italia*, that is the first part of his famous printed work *Habiti antichi et Moderni di Tutto il Mondo* (I have inspected it at the Giorgio Cini Foundation, Venice, in an edition of 1598). Aside the representations of the *fachino* and the *cestaruolo*, Cesare Vecellio offers to his reader a concise but colourful description of their tasks, provenance and clothing (figs. 17 and 18).⁹⁰ We read that Venetian *facchini* mostly came from the area of Bergamo, from the valleys near Trento, and from Brescia as well. To carry heavy loads of goods on their back they made use of rough linen sacks, that they wore on their head just like a hood. *Facchini* had ropes hung at their belt, large socks and sturdy shoes. Cesare Vecellio’s text reads as follows:

⁸⁸ A.J.Martin in O. Kotková (2006), p. 57.

⁸⁹ A.J.Martin in O. Kotková (2006), p. 58, image taken from Cesare Vecellio, *Habiti Antichi, et Moderni di tutto il Mondo*, dated 1590.

⁹⁰ Cesare Vecellio, *Habiti antichi, et moderni di tutto il mondo. Di Cesare Vecellio. Di nuouo accresciuti di molte figure. Vestitus antiquorum, recentiorumque totius orbis. Per Sulstatium Gratilianum Senapolensis latine declarati*, (Giovanni Bernardo Sessa: Venice, 1598), f. 140 (*Facchini*) and f. 141 (*Cestarioli, che attendono alle Beccarie, et alle Pescarie*).

Facchini, ò Baštagi della Città di Venetia.

Ritrovansi in varij luoghi della Città di Venetia alcuni huomini, chiamati facchini, i quali per guadagno caricano, et discaricano i navilij, et barche; et portano le merci da un luogo all'altro sopra la schena. Questi tali per il più sono Bergamaschi, da quelle vallate di Trento, et Bresciani. Questi per l'ordinario il giorno di lavoro portano sopra le spalle alcuni sacchi di tela grossa di lino, il quale gli serve per portar qualche peso greve, et l'accomodano à guisa di cappuccio sopra la testa, et sopra vi pongono il peso. Nel resto hanno alcuni gabbani, i quali portano di sopra, et gli arrivano fino à meza gamba, i quali si cingono con una corda, alla qual cinta pendono altri mazzi di corde. Hanno certe calzette larghe di griso, che arrivano sopra il piede, et si mettono scarpe grosse.⁹¹

Together with the description of the Venetian *facchino*, I found the description of the Venetian *cestaruolo*, who was a porter of meat and fish (figs. 19 and 20). They were concentrated around the areas of San Marco and Rialto, and wherever fish and meat were sold. They were extremely familiar with the city, and they were employed by anyone who wanted to carry food home. *Cestaruoli* used round baskets with a rough linen sack in it to cover their load. Like *facchini*, the majority of them came from Bergamo and Brescia as well. Characteristic of their clothing was a hat made of felt, coarse linen fabrics, usually an apron, heavy socks and sturdy shoes. In order to find visual evidence on transport and porters, I also checked the book written by the Venetian engraver and publisher Giacomo Franco and published in 1610 and in 1614, entitled *Habiti d'huomeni et donne venetiane*, but did not find relevant material for this topic.⁹²

Specific Venetian guilds represented the porters of materials used for building. They were bearers of lime (*calcineri*), sand (*sabioneri* or *renaioli*), as

⁹¹ C. Vecellio (1598), f. 140.

⁹² Giacomo Franco, *Abiti di Uomini e Donne Veneziane* (Liguori Editore: Napoli, 2003).

well as tabulators and porters of bricks, shingles and limestones (*numeratori e portatori di mattoni, tegole e pietre da calcina*).

Calcineri⁹³

We do not know exactly when the guild of *calcineri* was founded. Their emblem is preserved in the Correr Museum and dates back to 1602.⁹⁴ Their altar was dedicated to S. Antonio Abate, and located in the Church of SS. Vito and Modesto in sestiere Dorsoduro (*San Vio* in Venetian), demolished in approximately 1810.

Sabioneri o Renaioli⁹⁵

Sabioneri, also called *renaioli*⁹⁶, took care of the loading, transport and sale of sand to be used in the building industry and in navigation (to ballast ships and boats). The origin of the guild dates back to February 25, 1279,⁹⁷ but the surviving manuscript contains a later copy bearing the date of May 1440.⁹⁸ The emblem preserved in the Correr Museum can be dated to January 7, 1520.⁹⁹ Their chapel was in the apse of the church of San Giovanni Battista in Bragora, in sestiere Castello, where in 1618 they built an altar dedicated to S. Andrea.

Numeratori e portatori di Mattoni, Tegole e Pietre da Calcina¹⁰⁰

⁹³ A. Manno (1995), p. 142.

⁹⁴ MC, Cl. I, 2102; it is not currently on display.

⁹⁵ A. Manno (1995), p. 144.

⁹⁶ The Italian translation for “sand” can be *sabbia* or *rena*.

⁹⁷ Their first *mariegola* was written on 25 February 1280, see G. Monticolo (1905), vol. III, pp. 41-52.

⁹⁸ BMC, Cl. IV, 194 (1357-1799, the fifteenth century is missing); also transcribed in G. Monticolo (1905), vol. III, pp. 52-53.

⁹⁹ MC, Cl. I, 2126; it is not currently on display.

¹⁰⁰ A. Manno (1995), p. 144.

We know that this guild's statute, dated May 1222, has survived thanks to the copy made by Giovanni Monticolo in 1905.¹⁰¹

Travasadori e Portadori de Vin ¹⁰²

Since 1569, Venice had specific porters for wine, who joined the guild of wine merchants in 1609. They had an altar dedicated to Ognissanti, built in 1569 in the church of San Bartolomeo (Bortolomio, rebuilt in 1723), in sestiere San Marco. The headquarters of the guild were near the Rialto Bridge in Calle del Gambaro, in sestiere San Polo. The guild had the monopoly on the loading, transport and unloading of wine in Venice, as stated many times in the *mariegola*, preserved in the Correr Library.¹⁰³

For instance, in chapter III we read:

“che li portadori da Vin per acqua non chiamino alcuno che non sia in Scola a travasadori, e che li portadori possino chiamar altra barca per la summa fino a doi bigonzi.”¹⁰⁴

The definition as *portadori da vin per acqua* means that they transported wine via waterways. They had to employ only the members of their own guild (*scola*), although, if necessary, they could pay for an additional boat to carry their load. The boats were managed by the corporation, which also decided where they had to be anchored. In fact, chapter 50 is about *Dove deve star le*

¹⁰¹ G. Monticolo (1905), vol. I, pp. 55-57.

¹⁰² For the catalogue entry of the *mariegola* see B. Vanin, P. Eleuteri (2007), p. 73, n. 104; General information about the guild is given in A. Manno (1995), p. 141. For wine porters, see also Lester K. Little, *Indispensable Immigrants: The wine porters of northern Italy and their saint 1200-1800* (Manchester University Press: Manchester and New York 2014).

¹⁰³ BMC, Cl. IV, 104 (1569-1805). Another copy of the *mariegola* is in BNM, Cod. It. VII, 1497 (9388).

¹⁰⁴ “waterway wine porters must not employ as a porter anyone who is not in the Scola, and porters can use other boats up to the price of two *bigonzi*.” BMC, Cl. IV, 104, chapter 3, f. VIr.

barche con Orne.¹⁰⁵ Thanks to chapter 49, we know that if *peateri*¹⁰⁶, or any other worker, wanted to load or pour wine, they had to obtain permission from the *Magistrato de Regolatori sopra li datii*.¹⁰⁷

Acquaroli

The *acquaroli* were porters and sellers of potable water, which has always been a rare resource in Venice.¹⁰⁸ They met in sestiere Dorsoduro, in the church of San Basilio (*Basegio*), demolished in 1824. An altar of the guild is recorded in 1471, and it was restored in 1670-1671 to repair damage due to humidity. *Acquaroli* had three patrons: San Costanzo, Blessed Pietro Acotanto and San Lorenzo Martire. Since 1386, the headquarters of the guild were in Campo San Basegio (street number 1527/A), very close to their church. The statutes of *acquaroli* are preserved in the Correr Library in three volumes.¹⁰⁹

Carboneri o Portadori de Carbon

This was the guild of porters of coal, that had an altar dedicated to S. Lorenzo Martire in the church of S. Salvatore (*Salvador*), in sestiere San Marco.¹¹⁰

¹⁰⁵ BMC, Cl. IV, 104, chapter 50. f. VIIIv. *Orne* is the Venetian word for the Italian *urne*, that means containers.

¹⁰⁶ *Piateri* were drivers of *piatte* (Venetian boats for transport) discussed in the following pages.

¹⁰⁷ *Non si possi da Piateri, ne Travasadori, in Orne o Arna si di qual si voglia sorte si di giorno come di notte caricar, ne travasar de ragion de castellani senza licenza del Magistrato de Regolatori sopra li datii*. BMC, Cl. IV, 104, chapter 49, f. VIIIv.

¹⁰⁸ B. Vanin, P. Eleuteri (2007), p. 95-96, n. 133, 133bis and 133ter. A. Manno (1995), p. 162.

¹⁰⁹ BMC, Cl. IV, 133. Volume I contains the years 1471-1803; volume II contains the *terminazioni* of the guild and other deeds, in the years 1735-1765; volume III contains reports of the meetings of the guild (*riunioni di capitolo*) in the years 1786-1805.

¹¹⁰ B. Vanin, P. Eleuteri (2007), p. 31, n. 42; p. 132, n. 184. Manno p.116.

The statute of *carboneri*, renewed in 1519, survives in two copies.¹¹¹ I have inspected their *mariegola* preserved at the Correr Library, that contains chapters about devotional and welfare activities of the members, and also chapters that regulate specific aspects of their job. Charcoal arrived in Venice via waterways, on board of *barche* and *burchi*. Then it was loaded in baskets carried on the shoulders, and transported to destination on foot. These two systems of transportation are visible in the only illustration of the *mariegola*, where two *carboneri* are working below the image of the Lion of Saint Mark (fig. 21)¹¹². A similar representation is visible in the emblem of the guild dated to the early seventeenth century and visible at the Correr Museum in Venice, where we can see a “station of coal” along a Venetian canal (fig. 22).¹¹³ A Venetian porter of charcoal is also present among the drawings made by Giovanni Grevembroch in the eighteenth century (fig.23).¹¹⁴

Transport on shoulders, with the aid of a wooden stick, had never been abandoned, continuing to be a common practice in rural areas until the past century. The baskets used by these farmers in the countryside of northern Italy at the beginning of the twentieth century are very similar to the baskets represented in the *mariegola* of *carboneri* (figg. 24-31). This type of basket, called “gerla di vimini”, could be worn like a backpack, thanks to two leather straps around the shoulders. As we could expect, other visual evidence reveals that charcoal was not the only merchandise to be carried on shoulders in the sixteenth century. For instance, a drawing attributed to Jacopo Bellini represents a man - maybe a Venetian wine bearer - with a wooden chest on his shoulders and a walking stick in his hand (fig. 32).¹¹⁵ As for paintings, individual porters were also used to carrying them on their

¹¹¹ BMC, Cl. IV, 184 (dated 1 April 1519, containing years 1519-1795); BMC, Cl. IV, 42 (dated 1 April 1519, copy of the previous n. 184 executed by Giambattista Lorcazi in March-April 1854, containing years 1519-1795); ASV, Arti, b. 61 (dated 1 April 1519, copy from a *mariegola* of 1476, containing years 1476-1681).

¹¹² BMC, Cl. IV, 184, 1r.

¹¹³ MC. Cl. I, 2122.

¹¹⁴ G. Grevembroch (1981), vol. IV, n. 65.

¹¹⁵ Michel Florisoone, *Les Dessins Venetiens du XV au XVIII siècle* (Éditions Hypérion: Paris 1950).

shoulders. Porters are depicted in a canvas dated 1590, entitled *The Confiscation of the Contents of a Painter's Studio*, and attributed to the Frenchman François Bunel II, court painter to King Henry IV, (fig. 33).¹¹⁶ In the scene, porters are able to carry framed paintings as well as huge trunks possibly containing rolled canvases, sculptures and other artistic objects. They used little wooden structures, that are fixed on their back as backpacks (fig. 34). This sixteenth-century visual document is one of the most important that I have examined so far. Even if the action does not take place in Venice, I believe that the same method could have been used for transport of paintings in the Republic and other cities. Like the *gerla*, the wooden tool represented in the canvas also had a correspondent in the farms of northern Italy during the nineteenth century: it is the so called *càdula* (fig. 35). Finally, historical records also document paintings carried on shoulders by individual porters. For instance, Titian's *Bacchus and Ariadne* was transported in 1523 from Venice to Ferrara "by a single porter on his shoulders".¹¹⁷

I.4 Boatmen

The following Venetian guilds were in charge of transport by water. As I have already reported in my introduction, waterway transport was often favoured over transport on land, since it was cheaper, faster and safer. According to the opinion of Salvatore Ciriaco (Associate Professor at History Department, University of Padua), waterway transport in Venice was preferred thanks to a rich and articulated system of canals; in later centuries these were systematically buried during the city campaigns of land reclamation carried out for sanitary reasons.¹¹⁸ In addition to the higher number of canals, Renaissance Venice also counted fewer bridges: this, of course, encouraged waterway transport. It is important to remember that a similar situation also characterised other cities in North Italy, for example

¹¹⁶ Mauritshuis Museum, The Hague.

¹¹⁷ Joseph Archer Crowe and Giovan Battista Cavalcaselle, *The Life and Times of Titian, with some account of his family* (John Murray: London 1881) edition of 1887, vol. I, p. 258.

¹¹⁸ Salvatore Ciriaco, *Acque e agricoltura nell'Europa moderna: il caso veneziano* (CLEUP: Padova, 1992).

Padua, Treviso and Bologna. Professor Luca Mola (History Department, Warwick University), during his talk at the Warwick in Venice Annual Convegno on November 27th, 2018, mentioned the higher number of canals in the ancient layout of those three cities. This information is important, I believe, in allowing us to imagine the Venetian reality not as an isolated, special and self-standing case study, but immersed in a lively and wider historical context that can possibly open new research paths and allow comparative studies.

Barcaruoli de Venesia, Pedoti, Piattereri or Peateri

As the Venetian Tomaso Garzoni wrote in 1585, the first purpose of navigation was the transportation of people and objects: “*La navigazione poi ci serve per più cose. Prima da traghettar le persone, et le robbe ne’ paesi dove vogliamo...*”¹¹⁹. Venetian owners and rowers of boats for rent, were gathered in a large number of guilds of *barcaruoli*. Archival documents testify that Venetian boatmen were spread in at least 32 different guilds, each of them with its own statute and station in town (*stazio*).¹²⁰ The difference between a simple porter (*bastazo* or *fachino*) and a *barcaruolo*, can be explained as follows: while the *fachino* was responsible for the wares he transported, a *barcaruolo* was primarily responsible for his boat. Among the surviving *mariegole* of *barcaruoli*, I inspected the statute of the *barcaruoli de*

¹¹⁹ T. Garzoni (1996), p. 1079.

¹²⁰ We know about: Barcaioli del Traiecto de la Loza per Mezo li Camerlengi, Barcaroli, sovegno de Servitori, Barcaroli al Tragheto del Ghetto Novo, Barcaroli del Tragheto dei Barbieri o della Riva del Vin, Barcaruoli del Tragheto del Corpus Domini, Barcaruoli del Tragheto della Dogana da Mar, Barcaruoli del Tragheto della Maddalena, Barcaruoli del Tragheto della Madonetta, Barcaruoli del Tragheto della Paglia, Barcaruoli del Tragheto della Riva di Santa Giustina, Barcaruoli del Tragheto di Pordenon, Barcaruoli del Tragheto di San Felice, Barcaruoli del Tragheto di San Marcuola, Barcaruoli del Tragheto di San Samuele, Barcaruoli del Tragheto di San Tomà, Barcaruoli del Tragheto di Sant’Eufemia della Giudecca, Barcaruoli del Tragheto di Santa Maria del Giglio, Barcaruoli del Tragheto di Santa Maria Formosa, Barcaruoli del Tragheto di Santa Sofia, Barcaruoli del Tragheto per Mestre-Marghera, Barcaruoli del Tragheto per Murano, Barcaruoli del Tragheto di San Geremia, Barcaruoli del Tragheto de Miran, Barcaruoli del Tragheto de San Rafaele et Liea Fusina. Information is found in A. Manno (1995), pp. 162-166. These all indicate ferry crossing points along the Grand Canal. I also recall here the relevant book by Guglielmo Zanelli, *Traghetti veneziani: la Gondola al servizio della città* (Venezia: Cicero editore, 2004), recommended to me by Rosa Salzberg: this study includes tariffs and ferry prices.

Venesia, also called *pedoti*, *piatteri* or *peateri*, since they were rowers (and sometimes owners) of boats for transportation purposes.¹²¹ The name *piatteri* (or *peateri*) is exclusively Venetian, and derives from the word *piatta* (or *peata*), a flat and wide boat used in Venice for transport.¹²² These basic vessels were usually rented to merchants who had to transport goods around Venice or to other cities. Useful visual evidence for waterways transport (of timber and wine) is offered by Giovanni Grevembroch in his drawings dating back to the eighteenth century (fig. 37 and 38).¹²³ The emblem of *peateri* is preserved in the Correr Museum, and it was restored in 1731 (fig. 39).¹²⁴ Until 1450, the church of the *peateri* was San Pietro di Castello. After 1517, they met for devotional purposes in the church of San Silvestro (rebuilt in 1837), in sestiere San Polo. Their altar, dedicated to Saint John the Baptist, was the first on the right.

The most relevant information provided by the statute of the *peateri*, is that they sometimes performed the same function as *fachini*: in some cases, they were not only responsible for the boat, but also for their load.¹²⁵ This role is

¹²¹ ASV, Arti, b. 7 (13 October 1453, 1453-1768). This statute is partially commented in A. Manno (1995), p. 114. For more detailed information, see the original statute in B. Vanin, P. Eleuteri (2007), p. 27, n. 36 and 36bis. I have also inspected BMC, Cl. IV, 36 I/II (I: frammento di *mariegola* dei *peateri*; 1548-1553); II: *mariegola* mutila, 1561-1688). A copy of a fragment of the *mariegola* is in BNM, Cod. It. VII, 1462 (9353) (*peateri*: estratti dalla *mariegola*, copia del XIX secolo, cc. 106-113 v.).

¹²² Giuseppe Boerio defines “*Peata, Piatta o Chiatta*” a “*barcaccia piatta da carico, assai forte, di molta capacità, per uso de’ trasporti di mercanzie pesanti da luogo a luogo. Queste sono le barche più antiche delle gondole, che usavansi in Venezia, alla cui estremità della prora, la quale è alquanto elevata, dicevasi anticamente Gragnostorto [...]*”, from G. Boerio (1856). p. 485.

“*Piatte* were flat-bottomed, stable boats used for transport of heavy loads throughout the lagoon and inland to the Terraferma”, from the essay by Emma Jones, in Kelley Helmstutler Di Dio, *Making and Moving Sculpture in Early Modern Italy* (Farnham, Surrey: Ashgate Publishing Limited, 2015), footnote n. 84.”For specific studies about Venetian ships and boats, see Lillian Ray Martin, *The Art and Archaeology of Venetian Ships and Boats* (London: Chatham, 2001); or the classic Lane, Frederic Chapin, *Venetian Ships and Shipbuilders in Renaissance*, (Johns Hopkins University Press: Baltimore and London, 1997, c. 1934). A later example of *piatta* can be seen on the right in the oil painting by Canaletto, entitled *Il Ponte dell’Arsenale*, dated to 1732 and preserved in the Woburn Abbey private collection (fig. 36).

¹²³ G. Grevembroch (1981), vol. IV, p. 140 and 141.

¹²⁴ MC, Cl. I, 2094.

¹²⁵ More precisely, the statute states that members with transportation tasks were excluded from the main appointments of the guild. See A. Manno (1995), p. 114.

suggested in the chapter II of the statute, regulating important aspects of their activity. For example, the *barcaruolo* could not leave his boat once it had been rented to a merchant. In addition to driving the boat, the *barcaruolo* had to either supervise the procedures of loading, transport and unloading, or to pay a penalty:

“che non se debbia partir el barcaruol da la barca da può che l’ha nolezada.”¹²⁶

A boatman could leave his boat to another boatman only in case of sickness, and only with legal authorisation from the *gastaldo*. Moreover, if the goods were stolen, the boatman would have been immediately expelled from the guild. The statute offers other information about the activity. For instance, chapter IV forbids a *barcaruolo* to rent but his own boat: *de non nolizar salvo la sua barca*.¹²⁷ Chapter V specifies the only permitted place for *barcaruoli* to rent their boats: *de nolizar barche se non a la riva de la stadiera*.¹²⁸ Chapter VIII teaches how to load a boat successfully¹²⁹, and in chapter LII we read that drivers of small boat cannot load any kind of goods but the ones that belong to a to a single merchant.¹³⁰ Every merchant had to sign a contract with the guild of *piatteri*, in order to transport his goods via waterways. On 25 September 1592, the *Collegio* allowed the guild to ship any type of good. But there were exceptions: *frutaroli*, *lugangheri* and *tentori* (sellers of fruits, pork butchers and dyers) were allowed to conduct their own boats. Also porters of wood, fagots and charcoal were free to use their own boats.¹³¹ It is interesting to observe that the guild of painters (*depentori* or *pittori*) is not listed among the exceptions. We can deduce that, for transport, painters were obliged to

¹²⁶ “the boatman is forbidden to leave the boat, once he rents it”. ASV, Arti, b. 7, chapter II, f. 6r (dated 1453).

¹²⁷ ASV, Arti, b. 7, chapter IV, f. 6v (dated 1453).

¹²⁸ ASV, Arti, b. 7, chapter V, f. 7r (dated 1453). The meaning of *stadiera* is “scale”, see Cortelazzo, *Dizionario Veneziano*, p.1308.

¹²⁹ ASV, Arti, b. 7, chapter VIII, f. 7v (dated 1453).

¹³⁰ ASV, Arti, b. 7, chapter LII, f. 20r.

¹³¹ ASV, Arti, b. 7, chapter 55, f. 21r, dated “Die 2 Januarii 1552”.

hire professional *piatteri*. However, from other parts of the document we learn that fraudulent transport was very common along Venetian canals. In fact, in 1608 the business of *piatteri* was in serious danger because of illegal competition from every kind of worker. Venice was swarming with boats that would ship any kind of goods, without resorting to professional *piatteri*. The guild, at that time, counted about 300 members, who were intimidated, threatened and even physically assaulted by competitors.¹³²

Other chapters help to understand the activity and the life of *barcaruoli*. For instance, chapter I shows that navigation was forbidden to members under 18 years of age.¹³³ Also, strict dispositions punished blasphemy against God and Saints, and penalties were levied by a well-prepared price list.¹³⁴

¹³² “Dearest brothers, each one of you is aware of the miserable condition of our art, continuously troubled and destroyed, since every day there are countless kinds of people of any profession and art, who get themselves involved in our business with all sorts of boats, doing every kind of rental and trade, in wood and in any other kind of stuff that is pertinent to us, making such a shameless competition that, if they are rebuked by one of us, they even dare to intimidate us, and they want to beat us, with great fright of our poor old men [...]”. Original text: “Fratelli Carissimi, Non è alcun di voi che non sappia in qual misero stato si ritrova l’arte nostra, et continuamente travagliata anzi redutta ad estermio grandissimo quando che giornalmente si vede infinite qualità di persone di cadauna professione, er arte che si hanno posto à far l’arte nostra con ogni sorte di barche, facendo ogni sorte di noli di mercanzie, di legne, e d’ogni altra sorte di robbe pertinenti à noi concorrendo tanto arditamente à quelli, che se da alcun de noi fratelli vien ripreso hanno ardir anco di minacciare e voler anco dar delle botte con tanto terror delli poveri vecchi et huomini nostri [...]”. ASV, Arti, b. 7, chapter 105, f. 60r, dated 1 November 1608.

¹³³ ASV, Arti, b. 7, chapter XXXII, f. 13v (dated 1453), “*Di chi inzuriasse i Santi*,” and ASV, Arti, b. 7, chapter I, f. 6r (dated 1453).

¹³⁴ *Di chi inzuriasse i Santi*, Chapter XXXII, f. 13v (dated 1453). Insulting God or the Virgin Mary cost 20 *soldi*, insulting a minister of the guild cost 16 *soldi*, insulting a saint cost 10 *soldi*, and insulting a brother in the guild cost 8 *soldi*. With this revenue, the guild could also earn some money to invest, for example, in the large altarpiece of the *Baptism of Christ* painted by Jacopo Tintoretto around 1580, still visible in the church of San Silvestro. The subject was very appropriate, since Saint John the Baptist was the patron of the guild, and water was undoubtedly a constant presence in the everyday life of a boatman. A. Manno (1995), p. 114. For this painting see the catalogue curated by Robert Echols and Frederik Ilchman, *Tintoretto 1519 - 1594* (Marsilio: Venezia, 2018), p. 203.

Burchieri¹³⁵

Burchieri were Venetian rowers of *burchi*. The *Burchio* was a strong boat used for transport, with its central part covered with a wooden roof, providing a place to sleep.¹³⁶ This type of boat is represented on the cover of the *mariegola* of the *burchieri*, preserved in the Correr Library and dating back to 1588 (figs. 40-42).¹³⁷ The corporation of *burchieri* was founded in 1518. Their devotional church was San Gregorio, and their patron was the Holy Virgin. The headquarters of the guild was at number 470 in Campo S. Andrea, in sestiere Santa Croce. In Venice and Veneto there were many other guilds of *burchieri*, that carried goods on different routes. For instance, we know about the companies of *Burchieri di Verona* and *Barcaioli del Traghetto di Vicenza*. The guild of *Burchieri di Rovinazzo e Cavalcanti* was in charge of cleaning the canals from plaster, dirt and mud. The guild of *Tiradori da Dolo a Fusina* used horse-carts to pull the boats along the canal from Dolo to Fusina.¹³⁸ Finally, vivid details about Venetian transport technology is given by the so-called *Burchio da pesse*, a boat with a submerged and perforated bottom, specifically used to transport live fish.¹³⁹

Conclusions

We can say that it is very difficult to understand how procedures of packing and transport in Renaissance Venice really worked. This is on account of various factors: the variety of corporations that animated the city at that time, the fact that many activities were carried out irregularly and, therefore, are impossible to document; and, above all, the lack of archival

¹³⁵ A. Manno (1995), p.165. Vanin, Barbara, Eleuteri, Paolo, *Le Mariegole della Biblioteca del Museo Correr*, (Marsilio: Venezia, 2007), p. 141, n. 198.

¹³⁶ “Barca forte da carico, con un coperchio nel mezo, detto in vernacolo Tiemo o Felce, di tavola immobile, co’ suoi ricetti in poppa e in prora, per uso di dormire”.G. Boerio (1856), p. 107.

¹³⁷ BMC, Cl. IV, 198. Only the cover survives.

¹³⁸ A. Manno (1995), p. 165, 166.

¹³⁹ “*Burchio da pesse, or vivaio, specie di barchetta o battelletto tutto coperto e traforato, dove si custodisce vivo il pesce preso*”, G. Boerio (1856), p. 107.

documentation. Despite the difficulties encountered in gathering data, this first chapter shows that many of the activities related to packaging and transport were conducted illegally and suffered because of the competition between corporations; many goods were carried around by single porters, preferably loaded on their shoulders. In the records I examined regarding the guilds, there is no specific mention to transport of paintings.

Chapter II - The Importance of Transport during Art Production

Introduction

It is important to remark that the significance of this doctoral project consists in the opportunity, familiar to art historians, to observe and study the actual physical art objects, together with the written documentation. Art historians have always been lucky enough to base their research not only on archival documents and published literature, but also on the inspection of the surviving physical objects themselves. In the case of this study, paintings are to be considered essential historical documents and unique sources of knowledge. In addition to the object-based nature of art-historical research, in recent years the field has had a very important development of interest towards materiality and luxury consumption, thanks also to contributions of famous scholars such as Richard A. Goldthwaite and many others. Thanks to the development of art history in the last decades, the traditional approach, that investigates a work of art as a unique and specific artistic expression, has gradually been flanked by a wider view of the discipline, that deliberately includes in the analysis the entire life cycle of the artwork and its specific background. The work of art is therefore contextualised and studied as one element of a complex and dynamic historical, economical and social system. As a consequence of this, every aspect of the chosen artwork can be analysed in light of a wider and vibrant historical context, that involves the history of art as well as many other disciplines. This new and more comprehensive vision of the history of art has been very well expressed by Henk W. van Os:

“There is a new awareness of the historical facts around which the art historian weaves his tale, and the clearest sign of that awareness is the historian’s interest in material research, which entails collaboration with restorers and scientists [...] A gradual change is taking place in the sort of background question that the art historian poses himself. The emphasis is shifting from cultural philosophy to socio-economic history, which is concerned with patrons, production processes and producers, and with the marketing, function and public reception of works of art. Socio-economic

history sees those works as products, as objects with a particular value and status. It places a strong accent on the material presence of the work of art. [...] A good interaction between art history and material research throws up questions concerning production conditions, studio organisation, the history of specific types of painting (altarpieces, frescoes, etc.), the function of art and the history of taste, all of which, for quite different reasons, are currently engaging the attention of art historians.”¹⁴⁰

Moreover Richard A. Goldthwaite, in the introduction of his book “Wealth and the Demand for Art in Italy 1300-1600”, wrote that he didn’t consider his book as a traditional book about history of Renaissance art. He wrote:

“It is in a certain sense not about art at all. Instead, this study of demand shifts the focus from all these considerations about art in particular to the overall material culture of which it was a part.”¹⁴¹

In researching the packing and transportation of an object of any kind (in this specific case, large-scale Venetian Renaissance paintings), we focus our attention on collecting those documents that provide information about materials used in packing, about packaging techniques, and about the various systems used to ship the objects to destination during the timeframe chosen for this study. Obviously, such themes are fundamental for this research, and an entire section of this work is devoted to them. However, it is important to notice that the factor of transport can sometimes also affect other aspects of the object’s life. The title of this doctoral project, “Making and Moving Venetian Renaissance Paintings”, shows the curiosity towards exploring the tight connection between the production and the transport of a painting. This section of my work, indeed, is devoted to studying the

¹⁴⁰ Henk W. van Os and J.R.J van Asperen de Boer, *Painting in the 14th and 15th Century: the Contribution of Technical Analysis to the History of Art*, Vol. 3, International Congress of the History of Art (XXIV, Bologna 1979), CLUEB, Bologna 1983. pp. 1-2.

¹⁴¹ Richard A. Goldthwaite, *Wealth and the Demand for Art in Italy 1300-1600*, (Johns Hopkins University Press: Baltimore and London, 1993). I also recall here other relevant studies like those by Paula Findlen, Ursula Klein, R. McCann, Michelle O’Malley, Evelyn S. Welch, Pamela Smith, and many others scholars who focused on history of materiality and on the socio-economic aspects of history of art.

important role that necessarily easy and safe transport played in the production of Venetian Renaissance paintings, even before any packing and shipping operations.

Going back to production, if we put it in relation with the factor of transport, we can easily elaborate the following research question: can safety during transport be considered a decisive factor when it comes to a Renaissance painter's choice of painting materials and techniques? In other words, can a painting also be produced in function of its transport? In the following pages I will write about the choice of best materials for painting supports (panel vs canvas) in relation to safe transportation. Moreover, I will present some historical sources on the choice of the best painting ground to be used on canvases that were going to be rolled up and shipped. Finally, thanks to an interesting archival document, published but not hitherto considered in the studies on this topic, I will make an observation about the preparation of large-scale canvas support in the painters' workshops in Renaissance Venice.

II.1 Panel or Canvas? The Best Painting Support for a Correct Transportation

Precious Historical Sources and Various Scholars' Opinions

Reflecting on sculptural practice in Early Modern Italy, Dr. Kelley Helmstutler Di Dio observes that such "practical issues as durability and modes of transport were of enormous importance at the time. Sculptors had to be keenly aware of the limitations, risks, and costs of sculpture production even as they tried to please their patrons". As we can imagine very well, choosing the best support to work with was also very important for sculptors. On this regard, she also mentions a letter, thanks to which we know about Giambologna's technical considerations, which are relevant to this discussion. Giambologna thinks that:

"small marble statues do not compare [with bronzes]; they run the risk of getting broken, whenever they are moved about from place to place, as well

as from the least accident or mishandling. And a man cannot guarantee to produce in marble anything with as extraordinary a composition as his imagination suggests, in the hope that the piece will be different from other people's [sculptures]. Marble also takes a very long time."¹⁴²

Focusing on the painting practice, we know for example that Sebastiano del Piombo sometimes painted on very heavy plates of slate, making the transport process quite difficult.¹⁴³ Apart from these exceptions, wood panel and canvas were the most frequently used materials for painting supports in Renaissance Italy.¹⁴⁴ It is well known that canvas gradually took the place of wood panel; if we focus on the practice in sixteenth-century Venice, it is common knowledge that this change was due to the damp walls of the lagoon architecture, making canvas preferable to panel. As we read in the National Gallery Technical Bulletin dated 1978:

¹⁴² The letter containing Giambologna's statements is written by Simone Fortuna to the Duke of Urbino 27th October 1581. The letter can be found in Charles Avery, *Giambologna: The Complete Sculpture* (London: Phaidon, 1994), p. 251, doc. 4.

¹⁴³ Angela Cerasuolo, *Sebastiano e la Tecnica della Pittura su Pietra: Moventi, Modalità e Fini di una Invenzione di Successo*, in *Sebastiano del Piombo e la pittura su pietra: il Ritratto di Baccio Valori*, a cura di Alessandro Cecchi, Marco Ciatti, Oriana Sartiani (Firenze, 2014), pages 47-56.

¹⁴⁴ Regarding the most common materials and procedures used in the production of panel paintings, I can suggest the following studies: Peter Humfrey, *The Altarpiece in Renaissance Venice* (New Heaven and London: Yale University Press, 1993), in particular the section entitled "Methods of construction", p. 140; Michelle O'Malley, *The Business of Art* (New Heaven and London: Yale University Press, 2005), the section "Production procedures", p. 77; Anabel Thomas, *The Painter's Practice in Renaissance Tuscany* (Cambridge University Press, 1995), p. 149. See also Corrado Maltese, *I supporti nelle arti pittoriche*, Milano, Mursia, 1990.

For the relationship between painters and woodworkers I suggest: P. Humfrey (1993), "Painters and Frame-makers", p. 146; Jennifer Fletcher, *I Bellini in La Bottega dell'Artista tra Medioevo e Rinascimento* (Milano: Jaca Book, 1998), the section "Cornici", p. 139; A. Thomas (1995), "The painter and the woodworker, collaboration and subcontracting", p. 210, "Partnership between the painter and the woodworker", p. 154, "Preparation of the woodwork", p. 155. About the "legnaiolo" in the fourteenth and fifteenth century see also Christa Gardner von Teuffel, *From Polyptych to Pala. Some Structural Considerations*, in the above mentioned Henk W. van Os and J.R.J van Asperen de Boer (1983). An essential reference to study a variety of types of paintings, and the procedures, materials and practices that sixteenth-century European painters employed, I recommend the book by Jill Dunkerton, Susan Foister and Nicholas Penny, *From Dürer to Veronese: Sixteenth-century paintings in the National Gallery*, (Yale University Press: 2002). In particular, I refer to the section "Preparing the Panel", p. 211, and "Canvas Supports", p. 265.

“It should come as no surprise that a Venetian painting of the early 1520s is on canvas. Painting on canvas first began to predominate over painting on wood panel in Venice, in the early to mid-sixteenth century, particularly for large scale works, probably because of the impracticability of fresco-painting on damp and salt-impregnated walls. A number of quite large paintings of earlier date than this by other Venetian painters, including Carpaccio and Gentile Bellini, are on canvas, as are some of Giorgione’s and of Titian’s own works more are on canvas than on wood panel.”¹⁴⁵

There might be a number of reasons why a painter chose a specific material as a painting support; transport may also have been, in some cases, a relevant motivation for preferring canvas over wooden panel. Although specific remedies were experimented to prepare the walls, like the so called *pastellone* (a surface of absorbent crushed brick), Venetian painters had to gradually adopt canvas supports over plastered walls or wood panels (which both strongly react to humidity).

Giorgio Vasari writes about this matter, and he significantly ascribes the invention of painted canvases to the need for simpler transport; fabric was much lighter than wood and allowed for the possibility of rolling-up the composition:

“In order to move paintings from one country to another, people invented the convenience of painted canvasses, those that are really light and that, once rolled up, are easy to transport.”¹⁴⁶

Moreover, in his piece about the life of Jacopo, Giovanni and Gentile Bellini, Vasari writes about the practice, in Venice at that time, of painting mostly on canvas. Vasari justifies this use with the fact that canvas is immune to

¹⁴⁵ Arthur Lucas, Joyce Plesters, 'Titian's "Bacchus and Ariadne"', *National Gallery Technical Bulletin* Vol. II (1978), p. 38.

¹⁴⁶ This is my English translation of the following passage: “Gli uomini, per potere portare le pitture di paese in paese, hanno trovato la comodità delle tele dipinte, come quelle che pesano poco, ed avvolte sono agevoli a trasportarsi.” G. Vasari, *Le Vite de' più eccellenti pittori, scultori e architetti*, redazione del 1568, Gaetano Milanesi (ed.), (Florence: Sansoni, 1878-85), I, p. 188, *Introduzione alla Pittura, Capitolo IX, Del Dipingere a Olio su le Tele*.

woodworm attacks; it allows the creation of paintings of any dimension (especially large-scale); and, most relevantly for us, allows an easier and more convenient transportation:

“In Venice it is very usual to paint on canvas, for the reason that it (canvas) does not split and does not get woodworms, also because it is possible to make paintings of any wanted length, or also for the convenience of sending the paintings wherever you may want, with very little expenditure and effort.”¹⁴⁷

My investigation into how much scholars have addressed these matters has shown that, still today, they have sometimes different opinions about the issue. Peter Humfrey in 1993 writes that logistical problems could have affected the choice of both materials and format of a painting; however, he is sceptical that “ease of transport” could really have represented a crucial factor in the final choice of canvas as a support. The gradual diffusion of the canvas appears to him to be more like the natural consequence of its low cost, adaptability and hardiness, and he questions Vasari:

“But contrary to the opinion of Vasari, ease of transport does not seem to have represented an important consideration in the choice of support; and motivated, perhaps, by a sense of that greater appropriateness of panel to the dignity of the altar table, provincial customers, even more than metropolitan Venetians, maintained a tenacious preference for the traditional support. In the end, however, it was inevitable that the obvious practical advantages of canvas - its greater cheapness, lightness, flexibility and durability - should win the day.”¹⁴⁸

¹⁴⁷ Si costuma dunque assai in Vinezia dipingere in tela, o sia perchè non si fende e non intarla, o perchè si possono fare le pitture che che grandezza altri vuole, o pure per la commodità, come si disse altrove, di mandarle commodamente dove altri le vuole, con pochissima spesa e fatica. Ma sia di ciò la cagione qualsivoglia, Iacopo e Gentile feciono, come di sopra si è detto, le prime loro opere in tela...G. Vasari, *Le Vite de' più eccellenti pittori, scultori e architetti*, redazione del 1568, Gaetano Milanesi (ed.), (Florence: Sansoni, 1878-85), III, pp. 152-3, *Vita di Jacopo, Giovanni e Gentile Bellini*.

¹⁴⁸ P. Humfrey (1993), p. 146.

Although Humfrey writes that considerations of weight do not seem to affect the choice of pictorial support, his text continues to be one of the most relevant sources for understanding the logistical problems that influenced the choice of both materials and format in Renaissance paintings. For example, he observes that the preference for wood frames over stone frames was common in those artworks made for export, “like Vittorio da Feltre’s frame for Cima’s Capodistria polyptych [...], as well as various documented altarpieces sent by Lotto to the Marches and Apulia [...]”.¹⁴⁹

Also, Humfrey hypothesises the polyptych format continued to be adopted for provincial customers as much for practical as aesthetic reasons, since a polyptych was “easier to dismantle and transport in sections than a unified panel”.¹⁵⁰

A scholar who seems to agree with Vasari’s thesis is Jennifer Fletcher. In her book about their workshop she restates that the Bellinis used to work mostly with tempera or oil paint on a wooden panel, preferably made of poplar. However, when required by the dimension of the work, or by the need for simpler transport, they preferred to paint on canvas.¹⁵¹

In his discussion about “Materials and Techniques of Painters in Sixteenth-Century Venice”¹⁵², Robert Wald observes that the choice of canvas supports over fresco and panel painting depended on both practical as well as aesthetic reasons:

¹⁴⁹ P. Humfrey (1993), p. 157.

¹⁵⁰ P. Humfrey (1993), p. 157.

¹⁵¹ J. Fletcher (1998), p. 138. The section of the book I am referring to is “Questioni tecniche”, pp. 138-139. Another book that examines technical choices within the Bellini’s workshop is Paul Hills, *Venetian Colour: Marble, Mosaic, Painting and Glass, 1250-1550*, (Yale University Press: New Haven, London, 1999). I recommend the section entitled “Pigments and Colour Preferences in the Time of Giovanni Bellini”, where one paragraph is titled “From Tempera to Oil” and another “Adapting to canvas” (chapter 6, p. 133).

¹⁵² An essential book about various aspects of the painting practice in Renaissance Venice is Frederick Ilchman, *Titian, Tintoretto, Veronese. Rivals in Renaissance Venice*, (Boston: Museum of Fine Arts, 2009). Precisely, I focus on the section written by Robert Wald, *Materials and Techniques of Painters in sixteenth-century Venice*, p. 73, where the author discusses topics such as the construction of the canvas for painting, the preparation ground and the damage of transport.

“The limited palette and saturation of fresco made it hard to challenge the emergence of new oil-based paint media; and as tastes moved away from heavily decorated and gilded backgrounds for panel paintings toward more illusionistic settings, the solid supports that gilding called for were no longer necessary. Painting on canvas also allowed artists to execute large works in their studios instead of on-site. Furthermore, a substantial number of paintings were being exported from the city and often needed to be rolled for efficient transport.”¹⁵³

As will be discussed later in this thesis, and in particular in the section entitled "Conversations with Restorers", Dr. Jill Dunkerton, senior restorer at the National Gallery of London, is also wary of considering transport playing a decisive role in painting support preference. As she says, transport is only one of several factors that may condition a painter's technical choices. She thinks it would be wrong to assume that the choice of canvas is made entirely for transport.”

Similar caution in considering the importance of the "transport factor" came from my meeting with Dr. Cecilia Frosinini and Dr. Ezio Buzzegoli at the Opificio delle Pietre Dure in Florence¹⁵⁴. While they agreed that transport and handling are elements that deserve consideration and study to understand their full importance, they warned against giving these elements excessive relevance. Our scholarly aim is to consider the production process from unitary and comprehensive perspectives, taking into account all the different factors.

Andrea Mantegna's Words about this Technical Choice

Quite independently of the specific preference for canvas over panel in the Renaissance (particularly in Venice), we can examine the substantially different methods of transportation for panel and canvas paintings of same size. Canvases not only are lighter in weight, but they can also be reduced in size when rolled up, facilitating transportation. However, let's recall here

¹⁵³ R. Wald in F. Ilchman (2009), pp. 73-74.

¹⁵⁴ The results of these meetings are presented in detail in Appendix I, entitled "Conversations with Restorers".

Andrea Mantegna's letter addressed in 1477 to his patron, the marquis of Mantua; the painter consciously relates a choice of wooden panel or canvas according to the kind of necessary transport. Mantegna's words suggest that the transport factor played an essential role in the choice of his painting support, making this document a key source for considering transportation's role in the production process of a Renaissance painting.

"...I inform your excellency that, as you wish these portraits done, I do not understand, since your excellency wants them so quickly, in what manner they are to be done, in drawing only, or in color, on panel or on canvas, and what size. If your lordship wants to ship them far away, they should be done on thin canvas so that they can be wrapped around a little pole. Further, as your excellency knows, one cannot do something well from life if one has no arrangements for seeing it! Your excellencies are out of the territory. I will await the instructions you wish to give. I will wait to hear, and to have either little panels or little canvases so I can begin the portraits. My compliments to your illustrious lordship. July 6, 1477, Your excellency's follower Andrea Mant."¹⁵⁵

The reference to the "pole" around which the canvas can be rolled up is extraordinary, because it is rarely mentioned in the literature or represented in drawings and prints. It is also remarkable that Mantegna does not know yet the precise size of the paintings he is going to work on. They will probably be portraits of small dimensions since he is waiting to receive either "little panels or little canvases" to start his commission. This might suggest that size did

¹⁵⁵ Extract from a letter written by Andrea Mantegna to the marquises of Mantua on July 6th, 1477. See Creighton E. Gilbert, *Italian Art 1400-1500: Sources and Documents* (Evanston, Illinois: Northwestern University Press), p. 12. "[...] aviso la Ex.cia vostra chome volendo far quei ritrati, non intendo, volendolj la S. vostra si presto, in che modo habia a fare, o solamente diseg[n]a[ti] o coloriti in tavola o in tela e de che statura. Se la S. vostra li volesse mandare lontano se [posso] no (?) farli suso tela sotile per poterli avoltare suso un bastonzelo. Ancora chome sa la Ex.cia vostra non si può far bene dal naturale chi nona comodita divedere. Le Ex.cie vostre sono fuori de la tera, mi governero chome parera a quele, aspetaro de intendere et di avere o tavlete oli telareti chio posa dare principio aditi ritratj. Mi racomando ala I. S. vostra, die 6 Julij 1477, de la Ex.cia Vostra el disipolo Andrea Mant." The Italian translation is taken from Paul Kristeller, *Andrea Mantegna*, (Cosmos: Berlin and Leipzig, 1902), p. 534, n. 69. The original document is preserved in the Mantua State Archive, Archivio Gonzaga.

not really matter when it came to rolling technique: small-size canvases were rolled up as well as large-scale ones.

The progressive transition from wooden panel to canvas, that can be seen for example in the development of Titian's career, is also evident in many other cases. In the National Gallery's catalogue we read that:

"Before 1550 the largest of Titian's paintings (including the *Assunta*) and many of those sent to other cities (notably major altarpieces made for Ancona, Brescia and Milan) were on panel. Wood was also employed as a support for some early furniture pictures and a few small devotional ones (including the Dresden *Tribute Money*). His later works, with the exception of a few that were painted on stone, are almost all on canvas."¹⁵⁶

How and how much the need of a simpler transport could have affected this technical transformation, this can be a valid research question for future investigation about Titian, as well as about other artists. This research guideline provides an original and contemporary approach to the objects examined here.

The use of fine canvas for ease of transport is also postulated by Jennifer Fletcher regarding Cima da Conegliano's technical choices: "This may account for Cima's unusual use of a fine canvas, a support more common in Venice, which, being relatively light, might have facilitated transport from the capital to Vicenza."¹⁵⁷

Other painters are known to have used both wood panel and canvas as painting supports during their careers, making it difficult to understand if the preference was influenced by pure transportation issues. Sometimes the use of a canvas is intuitively explained in relation to the need for easy transport. Apart from the example postulated by J. Fletcher above, of Cima da

¹⁵⁶ Nicholas Penny, *The Sixteenth-Century Italian Paintings. Volume II: Venice 1540-1600*, National Gallery Catalogues (National Gallery Company: 2008), p. 203.

¹⁵⁷ Jennifer Fletcher, "Cima da Conegliano: Conegliano" *The Burlington Magazine* Vol. 152, No. 1288, Eighteenth-century art and design (July 2010), pp. 500-502.

Conegliano's altarpiece for S. Bartolomeo in Vicenza¹⁵⁸, another case could be one of the few canvases on display at the Vivarini exhibition in Conegliano in 2016: *Cristo Portacroce* by Alvise Vivarini. According to the catalogue, this painting was probably used in processions because, being made on a fine canvas rather than on a wooden panel, it is light weight and easy to carry.¹⁵⁹ In his 2005 essay, Andrea De Marchi compares and analyses the differences in panel paintings construction between Tuscany (and from central Italy in general) and Venice. He specifically refers to polyptychs, and suggests that specific needs of transport and handling probably have affected the artworks' design.¹⁶⁰ Although the article does not address paintings on canvas, it questions the materiality of paintings in the same way as employed by this paper. More specifically, polyptychs produced in Venice and the Veneto¹⁶¹ starting in the early fourteenth century, present wooden panels that are structurally independent from the surrounding wooden frames; they are also individually covered with gesso, whereas these two elements are glued and gessoed together in artworks produced far from the Venetian influence. To cite just one example: the Sienese *Maestà* by Duccio di Buoninsegna dated 1311, where the frame is structurally united with the main panel. This radical difference in construction is particularly evident when a polyptych is disassembled and its original frame is removed: in Tuscan artworks we can see the bare wood under the frame, while in Venetian artworks the same part is covered in a white gesso layer that continues even underneath the frame. Therefore, in the latter case, the panel and the frames are produced as two

¹⁵⁸ The use of fine canvas for ease of transport is also postulated in J. Fletcher (2010), pp. 500-502, where we read: "the Vicenza altarpiece (no.4) dated 1489 was not ordered by the brothers Giacomo and Girolamo Sangiovanni but by Leonardo Sangiovanni, a monk in Venice who paid for its chapel in S. Bartolomeo with money raised from preaching. This may account for Cima's unusual use of a fine canvas, a support more common in Venice, which, being relatively light, might have facilitated transport from the capital to Vicenza".

¹⁵⁹ Giandomenico Romanelli, *I Vivarini, Lo Splendore della Pittura tra Gotico e Rinascimento*, Catalogue of the Exhibition in Conegliano, February - June 2016, (Marsilio: 2016), catalogue number: 23, p. 147. The painting is cm 170 x 148, and it is dated to around 1475.

¹⁶⁰ Andrea De Marchi, *Autour de Lorenzo Venezieno: fragments de polyptyques vénitiens du XIVe siècle*, catalogue of the exhibition in Tours October 2005 – January 2006, (Cinisello Balsamo: 2005).

¹⁶¹ More in general, in territories under Venetian rule.

elements independent of each other. Typical of the Venetian tradition, this second system could seem primarily intended to facilitate transportation and assembly at destination. Here we recall the traditional familiarity of Venetian merchants with long-distance shipping procedures. However, Dr. Andrea De Marchi prefers to ascribe the independence of panels and frames to the will to minimise damage caused by the warping of wood. He reports that the same problem, in Tuscany, is solved designing sophisticated systems of cross bars that allow seasonal movements without risks of breakage. However, it is my belief that, if the various panels that compose the polyptych are independent of each other, they can be moved in a more convenient manner. Maybe easier transport was not the original priority underlying these production practices, but they probably affected shipping in a positive way. In conclusion, the structural differences between Venetian and Tuscan polyptychs have a very practical explanation. And, even if ease of transport is not considered the main motivation, the research question and the vision adopted by De Marchi represent very important contributions.

The connection between the choice of the best material to use as painting support and transportation procedure could represent a valid and stimulating topic for further research in the future. The need of a simpler and safer transportation may have affected also another element of the production of a painting: the preparation layer, that will be discussed in the next paragraph.

II.2 Flour or Gesso? The Best Preparation Ground to be used for Paintings Destined to be Transported

The next step of my analysis of production procedures in relation to transport issues concerns the choice of the best preparation ground for paintings on canvas. There is a vast amount of literature dealing with the production of

paintings on canvas¹⁶², but here I will refer to sources useful for understanding if the preference for a certain preparation ground over another could have been influenced, in the sixteenth-century painting practice in Venice, by practical considerations about safe handling and transport. This research allows us to venture into a field that has not yet been extensively considered by scholars. Indeed, there are only two remarkable bibliographical references related to this technical choice in Renaissance Venice, and obviously they are essential starting points for my research. The first study is the aforementioned article about Titian's *Bacchus and Ariadne* preserved in the National Gallery collection (NG 35).¹⁶³ Secondly, I found essential observations on the painting ground in an essay written by Robert Wald in 2009. According to Wald, painters discovered that certain adjustments needed to be found when constructing paintings that were to be rolled for transport.¹⁶⁴ He also writes that in the practice of renowned sixteenth-century painters like Titian, Tintoretto or Veronese there is a clear connection between the artwork's large dimension, the choice of a thick (more resistant) canvas, the deliberate use of a thin ground (preferably gesso) and, finally, considerations about a convenient and practical transportation combined with the need to keep the painting safe in transit. Moreover, according to Wald, all these factors contributed to defining the special qualities of the famous Venetian brushwork.¹⁶⁵

Titian is just one of the numerous Venetian artists who could be considered here. He could be taken as a starting point for this kind of research, which is

¹⁶² Here I list some sources among the extensive literature that has been published about the production process of a painting on canvas, and specifically about the preparation ground: Jill Dunkerton, Susan Foister, Dillian Gordon and Nicholas Penny, *Giotto to Dürer: early Renaissance paintings in the National Gallery* (Yale University Press: 1991), p. 162-4; Joyce Townsend, Tiarna Doherty, *Preparation for Painting. The Artist's Choice and Its Consequences*, (Archetype Publications: 2008); Daphne De Luca, *I Manufatti Dipinti su Supporto Tessile. Vademecum per Allievi e Restauratori*, (Il Prato: 2012). To explore in detail the history of *imprimitura* in paintings, I recommend the book by Maartjie J.N. Stols-Witlox, *Historical Recipes for Preparatory Layers for oil paintings in Manuals, Manuscripts and Handbooks in North West Europe, 1550-1900: Analysis and Reconstructions* (University of Amsterdam: 2014).

¹⁶³ A. Lucas, J. Plesters (1978).

¹⁶⁴ R. Wald in F. Ilchman (2009), p. 76.

¹⁶⁵ R. Wald in F. Ilchman (2009), p. 74.

easily extended to the practice of other Venetian painters of the Renaissance, like Tintoretto or Veronese, or other painters also included in the National Gallery's collection. Was that thin layer of gesso that Titian used to prepare his canvases throughout his career applied to better preserve the artworks during transportation? Indeed he does not seem to adopt Vasari's recipe¹⁶⁶ at all, and his canvasses are generally prepared with a very thin layer of gesso, mentioned by Volpato and confirmed by restorers and scientists at the National Gallery. A thin layer of gesso used as preparation ground can be also found in the painting *Bacchus and Ariadnae*, that will be presented more in detail in my fourth chapter, among the case studies in the National Gallery. An interesting case that I found during my research is the portrait of Johann Friedrich von Sachsen by Titian (1550-1551, Kunsthistorisches Museum, Vienna), since the painter uses a preparation layer that seems to simplify the transportation. We know that Titian often had difficulties shipping his paintings. It is worthwhile mentioning here below a sequence of very significant events that demonstrate the painter's awareness of the best materials to be used for an *imprimitura* that would allow the painting to be more flexible and portable. In 1550-1551, Titian learned of irreparable damages to paintings he had sent to Nicola Granvelle in Brussels just a few years before, in 1548. The problems were associated with the fresh state of the paint at the time of shipping. In order to avoid the same problems, it seems, Titian adopted a different technique to execute the portrait of Johann Friedrich von Sachsen, that he painted at the court of the Augsburg when he was around sixty years old. He prepared it with an unusual pure lead-white and walnut-oil ground in an attempt to increase the flexibility of the paint layers and to reduce the chances of further damage during shipment. In the relevant essay written by Robert Wald in 1999, among other important information about the portrait, we also read that the preparation layer is one, rather thin layer of tinted, white, oil paint. The preparation ground was applied first using a brush, while the canvas was already stretched on a frame

¹⁶⁶ Here and in the following pages I deliberately chose to use the term "recipe", that might seem bizarre nowadays, because I am considering methods and "recipes" for the painting practice recommended in ancient sources as Giorgio Vasari and Giovanni Battista Volpato.

support.¹⁶⁷ This would have saved the painter the time required for preparing a typical gesso ground. And this thin application would have allowed an higher level of flexibility than a chalk/glue mixture. As Gunter Schweikhart writes:

“This advantage of flexibility might have interested the painter very much. We now know that several of the paintings Titian executed during his 1548 stay in Augsburg were shipped very soon after they were finished. For example three portraits for the elder Granvella, including Nicola himself, Antoine and a portrait of Charles V. Correspondence between Titian and Granvella confirms the works were sent off to Brussels by September 26, 1548.¹⁶⁸ Considering the rather heavy work load the painter had during his first stay, the paintings could not have been more than a few months, if not weeks, old. Another letter from Titian, dated December 7, 1548, describes serious - seemingly irreparable - damages to three other paintings and although the actual cause of the damage is not stated, it refers to transport and the fresh state of the paint”.¹⁶⁹

The first serious effort to systematically investigate Titian's work began with Plesters and Lazzarini in the mid-1980s. Since then over 30 paintings have undergone examination without demonstrating significant deviations in the way the artist used a traditional gesso ground. For example, the painting catalogued as NG 4452, Titian's *The Vendramin Family*, that will be also discussed in the next paragraph devoted to the various types of canvas used by Venetian painters, is prepared with a simple layer of chalk in animal glue.¹⁷⁰ The variation in Titian's technique is therefore quite relevant for our

¹⁶⁷ Robert Wald, “Titian's Portrait of Johann Friedrich von Sachsen in the Kunsthistorisches Museum”, in *Tiziano: Técnicas y restauraciones*, actas del simposium internacional celebrado en el Museo Nacional del Prado los días 3,4, y 5 de junio de 1999, (Madrid: Museo Nacional del Prado, 1999), 87-97.

¹⁶⁸ E.W.Rowlands, *The Collections of the Nelson-Atkins Museum of Art, Italian Paintings, 1300-1800* (Milan, 1996), p. 172. Reference to L.Ferranino, *Lettere di Artisti Italiani ad Antonio Perrenot di Granvelle* (Madrid, 1977), pages 18-19.

¹⁶⁹ Schweikhart, *Tizian in Augsburg*, in K. Bergdolt and J. Brüning, *Kunst und ihre Auftraggeber im 16. Jahrhundert, Venedig und Augsburg im Vergleich* (Berlin, 1997) p. 31, note 58.

¹⁷⁰ N. Penny (2008), p. 206.

discussion, and it proves a particular attention by the painter for transportation problems.

Further research could be conducted about the flexibility of the preparation ground in relation to its composition. For example, I have read an interesting information about the preparation layer gradually becoming darker - and, apparently, more flexible - during the second half of the sixteenth century.¹⁷¹

Comparing Giorgio Vasari's and Giovanni Battista Volpato's Historical Formulas

Here below I will present and compare two well known historical sources from the sixteenth and the seventeenth centuries. Indeed, both Giorgio Vasari and Giovanni Battista Volpato in their treatises make suggestions for good painting practice, and offer two different recipes for the best ground to be used on canvases destined for transport. My aim is to show that the need for safer transportation was already considered and confronted during the production of a painting on canvas, in particular by choosing the best *imprimitura* for paintings destined for export.¹⁷² Since I have been frequently asked about the documented use of pigments, I want to stress that I have not found any record of the painter's preference for specific pigments over others, in function of a more suitable rolling procedure.

Giorgio Vasari and the "colla di farina"

Regarding the best *imprimitura* to prepare paintings on canvas, in 1568 Giorgio Vasari suggested not to use gesso, which cracks and chips when the painting is rolled-up for transport. Instead he recommends spreading the naked canvas with a mixture of flour-glue and water, or a mixture of flour-glue and walnut oil. In Vasari's opinion, this is the best way to prepare the support to be painted, especially when the painting is expected to travel:

¹⁷¹ D. De Luca (2012).

¹⁷² Lorenzo Pericolo suggested me to check relevant historical sources about the painting practice, in order to find possible further information about painting ground and its relation to a convenient handling and transport. He suggested to read the treatises by Giovan Battista Armenini *De' veri precetti della pittura*, or by Filippo Baldinucci *Notizie de' professori del disegno da Cimabue in qua*.

“In order for oil paintings to be flexible, if they have to be moved, they should not be gessoed, because gesso cracks with the rolling up; so we prepare a paste with flour and walnut oil...”.¹⁷³

As I found after much searching, this “flour-glue” is rarely mentioned in the literature. If we can easily come across references to “glue”, we rarely find the term “flour”. For example, Tomaso Garzoni, in his renowned *La Piazza Universale di Tutte le Professioni del Mondo* dating back to 1587, enumerates the activities and tasks of painters, among which he includes the act of spreading the preparation ground, that he names “glue” (“dar la cola”). Garzoni effectively describes the “cola” as, literally, a bed for the pigments (“letto a’ colori”). However, he does not specify “colla di farina”, but just “cola”:

“Et l’attioni loro son macinar colori, oro, compor colori, temprarli, o a sguazzo, o a oglio, o in altro modo, dar la cola, far il letto a’ colori, darn’una man o più, dipinger o a guazzo, o a oglio, o con cola, o in fresco, o a chiaro, o a scuro, ombreggiare, lustrare, inverniciare, miniare, dar di mordente, dorare, imbrunire, ritrar del naturale, et simili altre attioni...”.¹⁷⁴

An explicit reference to flour-glue can be found in Elena Favaro’s book entitled *L’arte dei Pittori in Venezia e i suoi Statuti*, devoted to the corporation of painters in Venice. More specifically, she reports on an archival document that testifies to the use by sixteenth-century artisans of fabrics and “colla de farina”:

[...] ma c’erano frodi che potevano avere conseguenze ben più gravi, come quella lamentata nel 1537, 21 settembre e attribuita ad artigiani ‘terrieri’ e

¹⁷³ “Queste a olio, perch’elle siano arrendevoli, se non hanno a stare ferme, non s’ingessano, attesoche il gesso vi crepa su arrotolandole; però si fa una pasta di farina con olio di noce [...]” Giorgio Vasari, 1568, ed. 1878-5, I, p. 188, *Introduzione della Pittura*, Capitolo IX, *Del Dipignere a Olio su le Tele*. An essential book to anyone who is interested in Giorgio Vasari is Patricia Lee Rubin, *Vasari: Art and History* (Yale University Press: 1995).

¹⁷⁴ Tomaso Garzoni, *La Piazza Universale di tutte le Professioni del Mondo*, curated by Giovan Battista Bronzini (Leo S. Olschki Editore: Firenze, 1996), p. 815.

forestieri che fabbricavano non solo forzieri, ma anche armi da difesa, servendosi di “strazze e colla de farina” come per le maschere, anziché di cuoio, così da renderle inefficienti a proteggere dalle frecce e dai sassi “tali che gli uomini vengono feriti e morti” [...].

Going back to paintings, Vasari also says that this recipe was commonly used in Venice for very large canvases, like the ones found in the Palazzo Ducale. I thought it would be interesting to verify if this recipe, prescribed by a Florentine painter and theoretician, had been adopted for large-scale paintings in Florence or Venice. After my investigations, the answer is no: we have no evidence of a frequent and systematic use of this recipe for the preparation ground either in the Florentine area, the Venetian area, or anywhere else.

Giovanni Battista Volpato and his recipe for the preparation ground

As explained above, the importance of Giorgio Vasari's formula consists in the fact that he suggests this *imprimitura* provides for a safer and more convenient transportation of paintings on canvas. The same connection between *imprimitura* and convenient transport is also made, around one century later, by Giovanni Battista Volpato: a painter born in Bassano, pupil of Novelli, who had studied under Tintoretto. His treatise *Modo da Tener nel Dipinger*¹⁷⁵ - probably written around the end of the seventeenth century or beginning of the eighteenth century - relates about paintings of the Venetian school at the conclusion of the seventeenth century. The manuscript is written in the form of a dialogue between two painter's apprentices and includes a discussion of the disadvantages of the 'old fashioned' (i.e. sixteenth century) gesso ground on canvas as compared with the 'modern' method, consisting of red ochre dissolved in oil. One apprentice even remarks that old pictures on canvas are better preserved if the gesso ground

¹⁷⁵ “*The Mode to be Observed in Painting*”.

is very thin.¹⁷⁶ I will present here below a summary of the four options mentioned by Giovanni Battista Volpato for the *imprimitura*.

First Option: “pure oil, without any glue”

First of all, one of the two apprentices asks the other what he thinks about the use of pure oil, without any glue, as preparation ground. The reply is that this practice is not successful: glue is an essential element thanks to its power to contrast the oil's drying action. In his treatise Volpato draws attention to the canvas taken off the stretching frame, and he carefully explains what happens with the wrong preparation: without any glue, the oil on the canvas will become dry and damaged “like the bark of a tree”, surely cracking very badly.

“First character: If one wanted to spread the preparation with pure oil, without any glue, what would happen?

Second character: When the canvas has no glue protecting it from the oil, it cannot keep its strength, for the oil dries, so that it becomes like the bark of a tree, and once the canvas is taken off the stretching frame the paint cracks and splits.”¹⁷⁷

Second Option: “colla di farina”

After this discussion, the younger painter continues asking about the *imprimitura* made of flour-glue, the same one recommended by Giorgio Vasari one century before; Volpato reveals his own opinion through the words of the elder apprentice. Without even mentioning Vasari's name, it is clear that Volpato has a very negative opinion of the older master's recipe, and indeed he remarks the inconvenience of preparing canvas with flour-glue:

¹⁷⁶ Mrs. Mary P. Merrifield, *Medieval and Renaissance Treatises on the Art of Painting* (first edition by J. Murray: London, 1849), (Dover Publications Inc.: Mineola, New York, 2013), the excerpts of Volpato's treatise I am commenting on can be found at pp. 727 -755. A copy of Volpato's autograph manuscript is preserved in Bassano.

¹⁷⁷ First character: Chi dasse la primitura con olio puro senza cola, che sarebbe? Second character: Quando la tela non ha la cola, che la difende dall'olio, non può conservar la sua fortezza, che l'olio si dissecca in modo che viene come una cortecchia d'arbore, che volendosi maneggiare giù dal telaro si taglia e si rompe. M. P. Merrifield (2013), pp. 727 -755.

“First character: I have seen that, in some workshops where canvases are prepared, they use flour-glue. It is not good, is it?

Second character: Flour paste is very bad”.¹⁷⁸

And he continues, explaining why:

“Second character: Because as it is a little thick (*gagliarda*) it cracks and the colour flakes, and even if it is thin, it makes the canvases rotten in a wet environment, mice eat it, and they use it because they prepare very sad canvases, that get consumed in eight or ten years, and because flour-glue repairs the fabric’s holes they use it.”¹⁷⁹

Third Option: Using Gesso

The conversation regarding the various recipes for the preparation ground continues, and the first apprentice painter asks about the use of the traditional mix of plaster and animal glue, the same *imprimitura* that had been used on panel paintings for centuries. Significantly the older painter replies that, after observing paintings by Bassano, the correct way to prepare a canvas with gesso is to spread it in an extremely thin layer, so thin that one can see the fabric’s fibres underneath. If the gesso ground is thin, the painting will survive safely. On the contrary, if the preparation layer is too thick, it will crack when the painting is rolled-up for transport:

“First character: And what about those who use gesso?

Second character: “[...] very little gesso is required, since I have observed in Bassano’s paintings, that those pictures which have been primed with but little gesso are in good preservation, while those on which too much gesso has been used flake off; and you may distinguish these from the others by the texture of the canvas, the threads of which are visible, although they have

¹⁷⁸ First character: Ho veduto in certe botteghe ove si imprimisce tele usar colla di farina, che forse non è buona? Second character: La cola di farina è pessima. M. P. Merrifield (2013), pp. 727 -755.

¹⁷⁹ Perchè come è un poco gagliarda crepa e il colore si scorza, e se pur è poca, al umido marcisce le tele, e li topi la mangiano, e quelli l’adoperano perchè imprimono tele tristissime, che on otto o dieci anni restano consumate, e perchè la cola di farina ottura i buchi della tela, si servono di questa. M. P. Merrifield (2013), pp. 727 -755.

gesso, priming and colours, since they are painted, while others which have smooth surfaces, from having too much gesso, scale off, and in addition to canvasses you can see this in ancient panel paintings, that preserve very well, and this is due to this use of the glue, but also dust ruins very much... [...]”¹⁸⁰

Gesso grounds are often associated with Early Italian wood panel paintings, but in Venice the use of the traditional gesso ground seems to have been adopted also by painters working on canvas supports in the sixteenth century. In general, if we consider painting practice in the Veneto we can notice a familiarity with Volpato’s recommendations: a thin layer of gesso is a very common preparation ground. This might reflect a wider trend of the painting practice in this area, and it is not to exclude that considerations about transport could have had a relevant role in this technical choice.

An example, over all, of this type of preparation for the canvas can be NG 26 Veronese’s *The Consecration of S. Nicholas* (1562, oil on canvas, 286.5 x 175.3 cm). In the catalogue we read that “the canvas is covered with a thin layer of gesso, not thick enough to obscure its texture, and over this there is a thin brownish priming layer of charcoal black, red ochre and lead white with a high proportion of medium”.¹⁸¹

Fourth Option: Using “Cola Pura”

Finally, according to the dialogue, in Volpato’s opinion the fourth recipe is the most valid for a high quality preparation ground: the simple and bare glue, spread two times on the canvas. As we read in the treatise:

“I use simple glue, as I told you, which if it is spread twice and polished once dry the canvas will result smooth, then I apply the priming grounded with linseed oil, and every earth is good for this purpose [...], I spread it on the

¹⁸⁰ First character: Quelli poi che adoperano il gesso? Second character: [...] ci vol pochissimo gesso, che ho osservato nell’opere del Bassano, che quelle che hano poco gesso si conservano, e quelle che ne hanno troppo si scorzano, e ciò si conosce dala tessitura dela tela che si scopre li rilevi di detta, ben chè habia gesso, primitura e colori, essendo dipinte, e quelle liscie che hano assai gesso si scorzano, et oltre le telle si vede l’esempio nelle tavole antiche, che assai si conservono, e ciò proviene da questa pratica della cola, ma anco la polvere rovina assai... M. P. Merrifield (2013), pp. 727 -755.

¹⁸¹ N. Penny (2008), p. 344.

canvas with the knife and, after it is dry and polished, I spread another layer, and in this way it results very well fixed, and this is the best and safest method to success...”.¹⁸²

And the second character replies:

“[...] but be careful not to put anything in the glue, neither earth, nor gesso, because they flake with time, but only to apply pure glue, in order to spread the priming, and to make the canvas preserve its strength, as I told you”.¹⁸³

II.3 Canvases Cut and Sewn in the Painter's Workshop

After our discussion of such choices as supports and *imprimitura*, we should turn our attention to the production of canvases as supports for painting. This phase of the production also involves the painter's considerations about handling and transport; this was especially true in those cases where the very large-scale paintings required a special care in the moment of transport and installation. In this paragraph, indeed, I will present some observations about the construction of large-scale canvas supports for paintings in Renaissance Venice¹⁸⁴. I will recall the various types of fabric used as painting supports, then I will deal with the problem of the provenance of the canvases for Venetian painters, since the question of where painters managed to get their

¹⁸² [...] io adopro cola semplice come ti ho detto, che data doi volte apomicando ogni volta dopo asiuta aciò la tela venga liscia, li do poi la primitura macinata ad olio di lino, e tutte le terre sono buone per questa faccenda, secondo il gusto di chi comanda, io piglio terra da bocali, terra rossa, et un poca di terra d'ombra distemperate dopo fate in polvere sotile e passate in foco con olio di lino senza macinarle, le do con il cortelo supra dela tela, e dopo asciuta e pomicata, le do un altra mano macinata, e così resta impressa benissimo, e questo è un modo il più sicuro e migliore per la riuscita. Ho veduto anco metter a mole nell'acqua la terra da bocale...[...] Questo è il modo che tengo alle volte preparar le tele al mio patrone, ma la meglio è nel primo modo che ti ho discorso. M. P. Merrifield (2013), pp. 727 -755.

¹⁸³ Second character: [...] ma haverti di non por cosa alcuna, ne terreta, ne gesso, nella colla, perchè con il tempo si scorzano, ma solo si dà la cola pura, aciò si possa distender la primitura, e che la tela conservi la sua forza come t'ho detto. M. P. Merrifield (2013), pp. 727 -755.

¹⁸⁴ Bibliographical starting points for the study of this topic are the book by J. Dunkerton, S. Foister and N. Penny, *From Dürer to Veronese: Sixteenth-Century Painting in the National Gallery* (Yale University Press: New Heaven and London, 1999), in particular the section *Canvas Supports* at Chapter IX, p. 265-271; and the essay by Robert Wald, *Materials and Techniques of Painters in* F. Ilchman (2009), pages 73-81.

canvases, and who was in charge of stitching the various lengths of fabric together, is still to be fully investigated and answered. Finally, I would like to mention an archival document (already known, but not discussed yet) that gives credit to the hypothesis that canvas supports were sometimes constructed within the painter's workshop in Renaissance Venice.

The Construction of Venetian Teleri: an array of lengths and weaves

Giorgio Vasari in 1568 celebrates the benefit of using canvas as painting support, since it allows to make paintings of any size.¹⁸⁵ The width of Venetian *teleri* was determined by the fact that they were produced to decorate walls, that were usually too damp for frescoes.¹⁸⁶ Large canvases were produced in Venice for fixed public locations in churches and *scuole*; the Venetian equivalent of interior mural painting, they could reach incredibly large dimensions.¹⁸⁷

Among the works by Tintoretto for example, I can mention the two famous large-scale canvases (more than 14 metres high) painted for the church of Madonna dell'Orto in 1562-1563, and representing the *Adorazione del Vitello d'Oro* and the *Giudizio Universale*. In this case, the church was located next door to the artist's house and workshop. It seems likely that the two canvases were probably assembled and sewn perhaps in the studio, then taken to the church to be nailed onto already constructed wood stretchers and, finally, painted *in situ*.¹⁸⁸ In October 2016 I visited the church with the curator Isabella Penso.¹⁸⁹ The restoration of the church of Madonna dell'Orto was the first important restoration curated by *Venice in Peril*. Work started after the flood of 1966 (although the church had already suffered from damp

¹⁸⁵ "Si possono fare le pitture di che grandezza altri vuole".

¹⁸⁶ An observation by Jill Dunkerton has to be reported here regarding the production of smaller paintings on canvas: low humidity rather than high humidity is more dangerous for panels, inducing warping and cracking, so the gradual shift after 1500 from panel to canvas for smaller paintings, is not explained by the lagoon climate.

¹⁸⁷ P. Hills (1999), p. 136.

¹⁸⁸ Isabella Penso, *Restoring Venice. The Church of Madonna dell'Orto*, curated by Isabella Penso (Marsilio: Venezia, 2016). p. 95.

¹⁸⁹ In occasion of the visit entitled "Visiting Madonna dell'Orto - Restoring Venice. The Venice in Peril Fund".

conditions for many years before), while the cloister was restored many years after the church. Tintoretto's canvases were restored by the Italian State. The huge cylindrical tools used to roll the paintings up during restoration may still be in the Scuola Grande della Misericordia building. Isabella Penso informed me about a hole (invisible from the floor) in the ceiling that might have facilitated the installation of the large-scale paintings from the attic, thanks to a system of ropes and pulleys. Although it is not possible to get to the attic nowadays, in the past it was accessible through the bell tower.

In other cases, the execution of the canvases was carried out in the painter's workshop and, once finished, the paintings were moved to the destination to be installed. This was the case, for example, of the canvases painted by Tintoretto for the *Sala dell'Albergo* in the Scuola Grande di San Rocco in 1564. The painter executed his works on finely woven, white linen pieces of canvas all of the same dimension (around 104 cm), probably coming from one single bolt of fabric. The dimension of the fabric allowed him to avoid seams, and the lightness of the weave permitted him to spread a faster and simpler preparation coat. He prepared the canvases with a thin layer of a white mixture of chalk and glue.¹⁹⁰

A famous oil on canvas of exceptional dimensions is the huge *Paradiso* in the *Sala del Maggior Consiglio* in the Venetian Ducal Palace that, according to Ridolfi (1648), was painted in 1588-1592 ca. by Jacopo and his son Domenico in several separate pieces in the sala grande della Scuola Vecchia della Misericordia, not far from Tintoretto's house and workshop, and using a gigantic scaffolding to work on this painting of colossal dimensions (700x2200 cm).¹⁹¹ These are only a few examples, all by Jacopo Tintoretto and his workshop, among a larger number of large-scale paintings on canvas produced by different painters and in different times in Venice.

¹⁹⁰ Grazia Fumo, Dino Chinellato, *Tintoretto svelato. Il soffitto della Sala dell'Albergo nella Scuola Grande di San Rocco. Storia, ricerche, restauri*, (Skira: Milano, 2010), p. 41.

¹⁹¹ Jean Habert with the collaboration of Lucia Marabini, *Il Paradiso di Tintoretto. Un Concorso per Palazzo Ducale*, Catalogue of the exhibition in Venice, Madrid and Paris, 2006 (Continent Editions: Milano, 2006), p. 55. Reference to Ridolfi 1648, ed. 1914-1924, II, p. 62; Soulier 1920, pp. 381-382; Von der Bercken and Mayer 1923, I, p. 30. Professor Tracy Cooper (Temple University), showed her interest for this case study in relation to transport and handling procedures.

It is well known that due to their huge dimension, Venetian *teleri* were rarely supported by one piece of fabric, because very large fabrics were not at all easy to find on the Venetian market of that time. Canvases were usually produced and sold in a standard width, that depended on the dimension of the looms. The standard Venetian loom's size was around 1 meter¹⁹², the convenient width for a single weaver to throw the shuttle on a hand loom. In some cases the dimension of the paintings corresponds to a standard sixteenth-century loom width of just over one metre, an example of this is the canvas used for *The Holy Family with a Shepherd* painted by Titian.¹⁹³ In other cases, Venetian painters had to assemble several lengths of canvas together, if they wanted to reach the dimension required for their paintings: we can mention the case of Damiano Mazza's *The Rape of Ganymede* (NG 32), about which the National Gallery's catalogue reads that "the original canvas is of a heavy herringbone weave, coarse and with numerous slubs. There is a vertical seam to the right of the centre. The width of the larger of the two pieces of canvas is 96 cm, which corresponds approximately to that of a standard loom".¹⁹⁴

When pieces of canvas needed to be joined, the seams were made by oversewing the folded edges with linen thread; nowadays the seams can usually be detected in X-radiographs.¹⁹⁵ Technical analysis of the supports has been already conducted on many paintings, mostly during restoration by different conservation laboratories. Study show that in some cases pieces of the same type of fabric are put together in a clean and tidy way. In other cases the pieces sewn together are made of canvas of different weave, assembled without following a regular and geometric scheme. Thanks to technical investigations we know that canvasses in sixteenth-century Venice were peculiar, painters used various types of weave in different ways: for canvas supports, Venetian painters used mostly linen, hemp and jute,

¹⁹² The standard Venetian loom's size is discussed in Luca Mola, *The Silk Industry of Renaissance Venice*, (John Hopkins University Press: Baltimore and London, 2000).

¹⁹³ Jill Dunkerton and Marika Spring, *The Holy Family with a Shepherd*, in *Titian's Painting Techniques before 1540*, National Gallery Technical Bulletin, vol XXXIV, 2013, p.46.

¹⁹⁴ N. Penny (2008), p. 90

¹⁹⁵ J. Dunkerton, S. Foister, N. Penny (1999), p. 270.

sometimes in blended fabrics, available in various thread densities and thicknesses. Examined fibres from these Venetian canvases all seem to be of flax (linen), but hemp may sometimes have been incorporated or substituted since the fibres, when aged, are virtually indistinguishable. As we read in the National Gallery Technical Bulletin, canvases used by Venetian painters became coarser as the century progressed, while finer textiles continued to be woven and were available to painters in the seventeenth century as well.¹⁹⁶ The large array of canvases available in the market is generously listed by Tomaso Garzoni in his work entitled *La Piazza Universale di tutte le Professioni del Mondo*:

“Da questi tessari provengono le tele, o fisse, o chiare, o grosse, o sottili, o alte, o basse, o grezze, o biancheggiate, o schiette, o a occhietti, o a spinati, o a opra di renso, o in altro modo. Et le maniere delle tele sono, la paiara, la paiarona, la paiarina, la lubiana, la canevazza, o lombarda, o vercellese, la tarlice, et sue maniere: cioè la villana, da un leone, da due leoni, da Monaco, da Sardegna, la lentima, il drappello, il renso, il cambrà, l’olanda, gli ortichini, la tela d’olmo, la sessantina, il chente, la tela di cento, di vinti, di trenta, et simili, et insieme tela nostrana, padoana, bresciana, cremasca, ariminese, romagnola, da Bagnacavallo, tela San Gallo, et d’altri paesi...”¹⁹⁷

As I reported earlier, Robert Wald makes further important comments about the various kinds of fabrics needed for a large-scale painting, and he relates the quality of the fabric to the quality of the brushwork, highlighting relevant connections between practical and aesthetic aspects of painting activity:

“some larger works by Tintoretto [...] and Titian [...] display a mixture of canvas sections, having different canvas weaves, within the same painting support. This is not to say that the often discussed vaporous quality of the

¹⁹⁶ Paul Joannides, Jill Dunkerton, *A Boy with a Bird in the National Gallery: Two Responses to a Titian Question*, National Gallery Technical Bulletin, Vol. XXVIII, p. 43.

¹⁹⁷ T. Garzoni (1996), p. 591.

“broken” Venetian brushwork was born exclusively of canvas constraints - although it cannot have been solely an aesthetic decision either.”¹⁹⁸

The criteria adopted by Venetian painters for the construction of their canvas supports are not always clear. We know that in some cases the mixed structure of the canvas did not reflect particular attention to the final result, as happens for instance in the large-scale altarpiece by Moretto (NG 625), dated 1540-1545. Showing the diagram of the canvas joins, Nicholas Penny writes that “the composition of this support demonstrates very clearly the artist’s indifference to achieving a consistent texture: not only was the twill attached to tabby, but the lower strip of twill was laid in different direction from the higher one...”.¹⁹⁹ In other cases, it is possible to state that the painter worked considering the structure of the canvas as a relevant factor, and there is a correlation between the joints in the fabric and the painted composition. For instance in the *Pietà* by Titian (Venice, Gallerie dell’Accademia and previously in the *Basilica dei Frari*); here small pieces of canvas are assembled around a central larger piece of fabric.²⁰⁰ This can also be seen in paintings made on a stone support, like Sebastiano del Piombo’s *Nascita della Vergine* in the Chigi Chapel in the church of Santa Maria del Popolo, where the faces of the characters are always contained within the perimeter of the various pieces of stone that form the support.²⁰¹ However there is no overarching study on how Venetian Renaissance canvases were sewn together.

Most Venetian canvases from the early years of the century, included those of Giorgione and Titian, are of a relatively fine, but tightly woven, plain weave (often called tabby weave or twill weave), while others incorporated more decorative designs (herringbone and damask). A famous example of plain weave canvas used for the support is the painting *Bacchus and Ariadne* (NG 35). Titian may have had no say since his patron Alfonso d’Este sent him ready stretched canvases for the purpose of painting the Bacchanals. The

¹⁹⁸ Robert Wald in F. Ilchman (2009), p. 74.

¹⁹⁹ N. Penny (2008), p. 182.

²⁰⁰ I wish to thank Carlo Corsato for this information.

²⁰¹ Information that I obtained from Dr. Simonetta Anellini and Dr. Daniela Luzi at “Michelangelo & Sebastiano. The International Conference”, 23rd-24th June 2017, The National Gallery, London.

original canvas is remarkably thin and finely woven (average thread count: warp (vertical on photograph) 24 threads/cm, weft 23 threads/cm) considering the relatively large size of the picture. To mention another Titian painting preserved in the National Gallery, *La Schiavona* (NG 5385) is painted on a robust twill weave canvas that, when stretched, causes less distortion than plain weave ones, and so there is only slight cusping.²⁰² Canvases in which the arrangement of the weft threads produced a diagonal twill pattern had been used by Giovanni Bellini, but at first, they seem to have been more common outside Venice. They were chosen by Mantegna for several of his larger late works, including the altarpiece representing The Virgin and Child with the Magdalen and Saint John the Baptist in The National Gallery (NG274), and were particularly favoured in Verona, for example in works by Antonio da Vendri and Girolamo dai Libri. Later they were much used by Veronese. A high proportion of the canvases by Moretto and Morone in the National Gallery collection are also of this type.

Some twill-weave canvases present a herringbone pattern: these fabrics are generally coarser, and they were preferred for wide paintings, such as Veronese's *Consecration of Saint Nicholas* and *The Family of Darius*, Jacopo Bassano's *Way to Calvary* or the two mythological scenes by Paolo Fiammingo. Twill and herringbone canvases are more robust than simple tabby weaves, and may also have been more expensive.

An interesting example belonging to the National Gallery's collection is the large-scale oil on canvas (149.4 x 168 cm) representing *The Origin of the Milky Way* painted by Tintoretto around 1575 (NG 1313), that has been trimmed irregularly. The support of this painting is composed by seven different canvas pieces, that also present different weaves: together with a medium-weight, Tintoretto used a herringbone twill. Thanks to a useful visual scheme, in the catalogue we can see the structure of the canvas, where capital letters indicate the various lengths of fabric. Although it is possible that Tintoretto had an afterthought during the construction of this support -

²⁰² (Thread count of canvas: 17 warp, 17 weft per cm). Jill Dunkerton and Marika Spring, *Portrait of a Lady ('La Schiavona') in Titian's Painting Techniques before 1540*, National Gallery Technical Bulletin, vol XXXIV, 2013, p.56.

especially about the lateral extension (letters E, F, G) - the general design of the canvas is to be considered original.²⁰³

Another interesting example in London's National Gallery is Tintoretto's *Christ Washing the Feet of the Disciples*, dating around 1575-80 (oil on canvas, 204.5 x 410.2 cm). This large-scale painting has a canvas support composed by "one long horizontal piece of heavy twill (A), and four vertical pieces (B, C, D, E), with a long strip of canvas of a medium tabby weave along the top (F) and another strip of the same (G) down the left side".²⁰⁴ The painting will also be mentioned in my fourth chapter, since it shows evidence of folding.

Also the painting representing an Apostle (or Saint, Prophet or Sage) catalogued as NG 272 and attributed to a Venetian painter, presents an interesting canvas support, that is to be interpreted as a fragment of an original larger painting with an irregular shape. The canvas consists of five separate pieces (as another visual scheme shows). It is surprising, in this case, the absence of raised seams or stitching, that let us understand that the various lengths of fabrics were originally glued on a wooden support one next to the other. The architectural element visible in the composition was most probably executed by a specialised artist on a separate length of fabric, attached *is situ* to the general composition.²⁰⁵

After considering the previous examples, in my opinion the visual schemes showing the structure of the support are really useful to understand how a specific canvas support has been assembled starting from separate lengths of fabric. During my inspection of the National Gallery's catalogue, I noticed that nearly no attention is reserved to Veronese's canvas supports, compared for instance to the attention devoted to some canvases by Titian or Tintoretto, visualised with a diagram. For example, no information at all is given about the canvas of NG 931, *Christ Healing a Woman with an Issue of Blood* (c. 1548, oil on canvas, 117.5 x 163.5 cm). About the above mentioned NG 26, *The Consecration of Saint Nicholas* (1562, oil on canvas, 286.5 x 175.3 cm), some information about the structure of the canvas is provided: it is an interesting case because there are two vertical lengths of herringbone weave

²⁰³ N. Penny (2008), p. 154.

²⁰⁴ N. Penny (2008), p. 164.

²⁰⁵ N. Penny (2008), p. 324.

canvas joined to the right of the centre of the painting. No visual scheme is shown, although it would be an interesting element in order to better appreciate the structure of the painting beneath the surface.²⁰⁶ A potentially interesting observation concerns the original dimensions of this painting and those of the later copies of it. Apart from a single case of full-size copy (made for the abbey of S. Benedetto Po, where also the original painting comes from) painted soon after 1790, probably by Giuseppe Turchi from Romagna, the other copies are less than one third large compared to the original.²⁰⁷ Certainly, a copy of smaller dimensions is simpler to handle rather than a large-scale painting. Therefore I believe that the “transport factor” could have had a relevant impact, sometimes, in designing copies from a larger painting (although the study of each single case is essential). Not even for *The Family of Darius before Alexander* we have the visual scheme of the canvas, that is described in the catalogue as two lengths of fabric joined horizontally.²⁰⁸ The same is for the other paintings by Veronese in the catalogue: the structure of the canvas support is described, but no visual diagram is presented.

Inspecting Mariegole in the Correr Library: some Observations from the Statutes of Fustagneri and Depentori

In the above mentioned treatise *Modo da Tener nel Dipinger*, Giovanni Battista Volpato mentions that someone was in charge of purchasing canvas for the painter’s workshop.²⁰⁹ Not much research has been carried out on the canvas trade for painting practice in Renaissance Venice: weavers’ stamps, however, show that canvases produced in the Netherlands were being used by Italian artists by about 1600 (and probably quite a bit earlier).²¹⁰ It is not

²⁰⁶ N. Penny (2008), p. 344.

²⁰⁷ One measuring 109 x 67.3 cm was lot 4 at Christie’s, London, 19 April 1973; another measuring 87.9 x 56.5 cm was lot 689 in the Christie’s sale at Castello de Bendinat, Majorca, 24-25 May 1999). We read that “both of these are likely to be copies made at the British Institution, which encouraged copies of less than half-size, or even at the National Gallery itself”. N. Penny (2008), p. 352.

²⁰⁸ N. Penny (2008), p. 354.

²⁰⁹ “[...] chi le compra [...]” M. P. Merrifield (2013), p. 729.

²¹⁰ R. Wald in F. Ilchman (2009), p. 73.

clear whether they were specifically woven for painters or whether the same textiles were also and perhaps principally manufactured for other purposes. A fascinating example of a reused fabric can be seen in the canvas Titian used for his portrait of the Vendramin family: despite the large-scale dimension of the painting (over two metres high), the fabric has no seams, and presents a damask pattern with a diamond-shaped motif. Therefore we can assume that Titian's fabric was an altarcloth or a tablecloth, like the ones that we often find depicted in paintings of subjects such as the Presentation at the Temple or the Last Supper. The diamond-shaped motif of the canvas used by Titian for his Vendramin Family also appears in several paintings by El Greco, among them the famous Burial of Count Orgaz in the Church of Santo Tomé in Toledo. In Spain the term for such fabrics was generally *mantelillo veneziano* (*mantel* = *tovaglia*).²¹¹ The Vendramin Family is not an isolated case in Titian's production: his workshop's *Venus and Adonis*, for example, presents a simpler weave of damask fabric with no seams used as support. It is well known that Venice was an important centre for luxury fabrics, but also for such fabrics for everyday use and sails as cotton and flax.²¹² Linen was also used - perhaps significantly for Venice - in the making of sails.²¹³ As Paul Hills writes, "Venetian sailcloth industry meant that the painters did not have far to look either for a textile support or the technology of sewing loom-widths together to create large expanses for narrative."²¹⁴

A register of the Guild of Second-hand Dealers from fourteen-thirty to the beginning of the seventeenth century is held in Museo Correr, Venice. Second-hand fabrics were currently sold in Venice by the guilds of *strazaroli*, *revendigoli* (dealers of second-hand rugs and clothes) and *telaroli* (sellers of canvas). However, we could also think that in some cases painters could

²¹¹ J. Dunkerton, S. Foister, N. Penny (1999) p. 268.

²¹² Antonio Manno, *I Mestieri di Venezia. Storia, Arte e Devozione delle Corporazioni dal XIII al XVIII Secolo*, (Biblos: Padua, 1995), p. 160.

²¹³ J. Dunkerton, S. Foister, N. Penny (1999), p. 268.

²¹⁴ P. Hills (1999), p. 136

receive second-hand sails from the arsenale.²¹⁵ As Maureen Fennell Mazzaoui writes in her book:

“Cotton or mixed cotton/linen, cotton/hemp canvas had advantages over linen sailcloth by virtue of its lighter weight, rapid drying qualities and flexibility. The longer lengths of cloth achieved through the use of the upright warper and the horizontal loom reduced the number of seams required in the construction of sails, thus contributing to greater maneuverability and wind resistance [...] In Venice sailcloth was made by the guild of *fustagnari* under contract with the Arsenal and according to the prescriptions of the latter. The sails were cut, sewn and fitted by workers of the Arsenal. Cloth destined for this purpose was woven in prescribed measurements and weights ranging from medium to coarse. The sewing of sail was done by specialised sailmakers who worked under contract for shipowners [...].²¹⁶

Here below I will present some interesting information that I gathered in Venice during my investigation of the *Mariegola of Fustagneri* and *Mariegola of Depentori* at the Correr Library. It is important, I believe, to report that I did not find any direct information about packing and transportation practices related to paintings. These practical aspects of transport were not very much considered in the examined statutes.

The first *mariegola* of which I report some excerpts here is the one of Venetian *fustagneri and coltreri*, producers and merchants of cotton wool, fustians, cotton fabrics - all materials that seem to have been important in the

²¹⁵ Regarding second-hand fabrics, important studies have been carried out by Dr. Patricia Allerston, who published extensively on this topic. An important publication is her *The market in second-hand clothes and furnishings in Venice, c1500-c1650*, (European University Institute: Florence, 1996). I also recommend the book by Paola Lanaro, *At the Centre of the Old World: trade and manufacturing in Venice and the Venetian mainland, 1400-1800*, (Victoria University, Centre for Reformation and Renaissance Studies: Toronto, Ontario, 2006).

²¹⁶ Maureen Fennell Mazzaoui, *The Italian cotton Industry in the Later Middle Ages, 1100-1600*, (Cambridge University Press, 1981), pp. 101-102. Another interesting topic is the study of silk, see Luca Mola, *La seta in Italia dal Medioevo al Seicento. Dal baco al drappo*, eds. Luca Molà, Reinhold C. Mueller and Claudio Zanier, Marsilio, Venice 2000; Edoardo Demo, *Wool and Silk. The Textile Urban Industry of the Venetian Mainland (15th-17th Century)*, in P. Lanaro (2006). For the study of the Italian cotton industry I recommend the work of professor Giorgio Riello (University of Warwick).

packing process. The corporation had its origin on 12th February 1503 thanks to the union of the two arts (*fustagneri* and *coltreri*). The reason of this association was to save money for rent and lights. The guild had its devotional activity in the church of S. Bartolomeo in the *sestiere* of San Marco, under the protection of the Holy Cross. The *mariegola* was renewed on March 1673.²¹⁷ To start the inspection of this statute, it is important to say that the production of fustians was regulated by precise rules, which also dictated the precise length and width of the fabrics.

“the length of the fustians made for sails, as well as of all the other fustians that are produced, must be at least 45 *brazza* (arms) and 3 *quarte* wide”.²¹⁸

As usual, the need for the corporation to set precise rules let us guess the presence of transgressors, explicitly mentioned in the following passage:

“those who have no law nor regulation, they do as they like making (fabrics) with not enough yarn, and thinner than prescribed by our orders.”²¹⁹

Some rules on the sale of goods produced by the corporation were intended to contrast their abusive display and sale by those who were not members of the company such as *zuponeri*, *sartori* or *straciaroli*. This suggests us that the problem of illegal sales existed, and that was to be contrasted. A not irrelevant problem was also the uncontrolled importation of fabrics by *marineri* (sailors) who arrived in Venice from outside. The *mariegola* reads:

“Nobody of any condition (zuponer, sartor, straciarol) who is not a member of our corporation, can sell or display any kind of fustians, neither *bambasine*

²¹⁷ Barbara Vanin, Paolo Eleuteri, *Le Mariegole della Biblioteca del Museo Correr*, (Marsilio: Venezia, 2007), p. 3, n. 1. See also Monticolo, I, 23, n.3; II, CXCI-CXCII; Venezia 1988, 227 nr. 167; A. Manno (1995), p. 156.

²¹⁸ “La longhezza adonca de fostagni sí da vella come tutti li altri che se fanno tesser siano almeno brazza 45 grezi, e larghi quarte 3”. Chapter XLIII, f. 40v.

²¹⁹ “Et loro che non hanno leze, ne ordine alcuno fanno come li piace, facendoli cum poco filado, e piu strette de quello vuol li ordini nostri”. Chapter VIII, ff. 9r-v.

nor yarns, nor any other thing belonging to our trade, under penalty of 25 lire...”.²²⁰

The statute pushes for a clear decision as to which art to practise. A weaver cannot take care of the sale, and vice versa:

“Nobody of any condition can be in no way weaver and merchant [...] they must have decided in which activity they are better, and the one (activity) they choose must be practiced, the other one must be abandoned”.²²¹

The following passage of the *mariegola* regulates the places where fabrics could be sold, that is the company shops. We find a mention to itinerant abusive vendors, present everywhere in town, with the fabrics hidden inside their cloaks: this gives us a vivid and effective image of the illicit traffic in Venice’s streets and canals of that time.

“They go around carrying fustians under their cloaks to sell them, not at better prices than ours, but buyers think they are making a bargain.”²²²

A declared and easily recognisable ink stamp was necessary for every merchant of the company, in order to be able to identify those who committed fraud:

²²⁰ “Che nissuna persona si zuponer, come sartor, ne straciarol, over de che condition esser se voia, che non siano scripti in el mestier nostro non possano vender, ne tenir in monstra fustagni de niuna sorte, ne bambasine, ne filadi, ne cosa alcuna che pertenga al mestier nostro sotto pena de lire vinticinque...”. Chapter VIII, ff. 8v-9r.

²²¹ “Niuna persona sia de che condition se voia non possa alcun modo ne inzegno esser textor e mercadante [...] debbano haver electo qual de queste do li venira meglio o Tesser o Mercadante; e quella li piacera debbia exercitar, l’altra lassar”. Chapter IX, ff. 10v-11r.

²²² “Vanno per la terra portando fustagni enteme sotto el mantello per vender quelle, non facendo pero miglior mercado de nui, ma par a quelli che comprano haver miglior de rata.” Chapter XXIV, ff. 21r-v.

“All merchants of our guild must have their mark to print it in ink on the fabrics, so that if a fraudulent piece is discovered we know who it is.”²²³

In another passage, a fine is established for purchasers of fabrics lacking of the guild production stamp (and therefore not produced in Venice). Individual buyers would not be sanctioned if they purchased the item - second hand! - from the guild of *rivendaroli*, which will be sanctioned instead.²²⁴

Finally, I would like to mention two passages with the rules for producing “fustagni da vella per la casa dell’Arsenal”, that is the fabrics used to make the sails, which in the document are clearly distinguished from the ordinary fustians for everyday use:

“Sailing fustians for the Arsenal are produced as well as those that are daily sold to each one”.²²⁵

“Fustians for the Arsenal and other ordinary fustians.”²²⁶

Obviously, I also devoted attention to the *Mariegola dei Depentori*. As I have already written, however, I have not found in it information about practices of packaging, transport and shipping of artistic products. The chapters of this

²²³ “Che tutti i mercadanti del mestier nostro debbano haver el suo segno da segnar over tamagar le pecie del inchiostro [...] accioche se fraude alcuna se trovasse in alcuna pecia, se sappia de chi la è”. Chapter XXXI, f. 27r. Same kind of instruction can be found in Chapter XXXV, f. 30v about “De bollar le pecie de fustagno sul teller”.

²²⁴ “De quelli che comprerà pezze non bollade”, that is “About those who will buy unmarked bolts”. Chapter XXXII, f. 28v.

²²⁵ “Si fabricano li fustagni così da vella per la casa dell’Arsenal, come quelli che si vendono giornalmente a cadauno”. 179v, 1616.

²²⁶ “Li fustagni per la Casa dell’Arsenale, & altri fustagni ordinarii...”. 211r, 1648.

mariegola are devoted to a detailed regulation of financial and legal aspects of the company's life, also in relation to other guilds.²²⁷

As for the statute of Collegio dei Pittori, created in 1682, it is commented in the following pages.²²⁸ The emblem of the guild of painters is kept at the Correr Museum, and the company headquarters were erected in 1572 in Calle Sporca (Cannaregio). The building, which was later demolished, stood on a plot of land purchased in 1531 thanks to the bequest of the painter Vincenzo Catena (dated 15 April 1530). Among the various chapters, the numbers XXXI (dated August 1437) and XXXVIII about the ban on the import of foreign icons in Venice seemed to me interesting for my research on the mobility of artworks. At first glance this prohibition seems to ensure that the traffic of Venetian icons was protected and under control, but usually a prohibition indicates the opposite tendency: a copious import of icons in Venice from outside. The bad opinion about imported products is significant of the reluctance towards non-Venetian products: foreign icons are said to be not well painted, and are considered dull objects.

"Foreign paintings made, painted and printed on canvas or on paper cannot be sold in Venice".²²⁹

"(People) believe they buy good works, instead they buy dull works".²³⁰

Quite interesting results produced the inspection of the *mariegola* of the Collegio dei Pittori. The association was established on 10th December 1682, when the *Consiglio dei Dieci* decided to separate the *pittori* from the

²²⁷ The *capitolari* of this guild date back to 7th December 1271 (Monticolo II/1 pp. 363-389, II/2 pp. 671-672, Monticolo 1891), and new *mariegole* were written in 1403, in 1436, in 1517 and in 1676. ASV, *Arti*, b. 1 (10th April 1436; 1st May 1676; 1436-1683); BMC Cl. IV, 163 (10th April 1436; 1st May 1676; 1436-1732); ASV, *Arti*, b. 103 (21st October 1577, it includes the *mariegole* of 10th April 1436 and of 8 August 1517; in chapter XXXV is mentioned a *mariegola* dating 3rd December 1403, and it is also mentioned an inventory of the possession of the school in Santa Sofia in 1700.

²²⁸ For the reference to this *mariegola*, see A. Manno (1995), p. 84.

²²⁹ "Che le depenture forastiere fatte, depente e stampade in tolla o in carta non possano essere vendute in Venetia". Chapter XXXVIII, f. 12v.

²³⁰ "Credeno de comprar boni lavori, e comprano tristi lavori". Chapter XXXI, f. 10r.

depentori, recognising to the *pittori* the status of liberal art. The painters had their devotional activities in the church of S. Sofia in Cannaregio under the protection of San Luca. The manuscript in the Correr Museum is a copy from the *mariegola* (between 1683 and 1698) commissioned by Cicogna in 1853.²³¹ In the statute of the *Collegio dei Pittori* there are some interesting examples of dispute with other corporations. The first is the dispute with the *carvers*, who complain that the painters create plaster figures in their place, damaging their business:

“Painters also practise the activity of carvers and make carved figures of chalk, clay and stone to the detriment of the mentioned carvers (*intaiadori*).”²³²

A similar dispute happened with the corporation of *casseleri*, which produced trunks and sometimes also painted them, undermining the activity of *depentori*.²³³ Finally, I will write about the dispute with the guild of *coltreri* in the next paragraph.²³⁴

Painters illegally cutting and sewing flags and cloths in their workshop

Finally, the last excerpt that I present here below is, in my opinion, the most relevant for this research. It is about the Venetian guilds of *depentori* and *coltreri* in fifteenth-century Venice. As we already know, *coltreri* were the Venetian producers of cottonwool, linens, fustians and flags (“bandiere”), and

²³¹ B. Vanin, P. Eleuteri (2007), p. 87, n. 123 e p. 156, n. 215.

Bibliography: Cicogna, IV, 236rv; Sagredo, 124; P.G. Molmenti, *Lo statuto dei pittori veneziani nel secolo XV*, Venezia 1884, 3; Monticolo, *Pittori*, 322 n. 2; Testi, 103 n. 2; Bratti, *Notizie d'Arte*, 436-437, 483; A. Niero, *Documenti sulla scuola dei depentori di Venezia*, in “Arte Veneta”, 19 (1965), 140 n.6; A. Manno (1995) p. 86; Vio p. 558; I. Cecchini, *Al servizio dei collezionisti. La professionalizzazione nel commercio di dipinti a Venezia in età moderna e il ruolo delle botteghe*, in *Il collezionismo a Venezia e nel Veneto ai tempi della Serenissima*, a cura di B. Aikema, R. Lauber, M. Seidel, Venezia 2005, 169-170 n. 48, 170 n. 68 e 69, 170-171 n. 77-80.

²³² “Anche loro Depentori fano el mestier de Intaiadori: imperò che i fano fegure relevade de zesso, creda e piera cun destruction de i ditti intaiadori”. Chapter XL (March 1457), ff. 14r, v.

²³³ Chapter LII (7 October 1482), ff. 57v - 58r.

²³⁴ Chapter XXXIX, ff. 13r, 13v.

in 1503 the guilds of *fustagneri* and *coltreri* unusually decided to merge in a single corporation.²³⁵ The document that I mention here dates back to October 9th, 1443, when a controversy happened between the guilds of *coltreri* and *depentori*. Specifically, some members of the Venetian painters's corporation were accused of cutting and sewing flags and cloths instead of just painting them. At the end of the trial, on February 12, 1443, the final decision was to order the *dipintori* to obey to the *coltreri* regulation:

“All painters who cut, sew flags and cloths, and all other workers who cut and sew, must register to the corporation of *coltreri*”.²³⁶

As I wrote in my first chapter, the organisation of the various guilds in Venice was quite rigid. However, the sentence was revoked on 12 February 1444 thanks to the action of Andrea Baselisco and Nicolò di Domenego, gastaldi of the guild of *depentori*. Later on, the guild of the painters was more favoured, and in 1460 the guild of *coltreri* had to pay them taxes “like at the time of Doge Francesco Foscari”. I believe that this document is important for my research because it shows that the Venetian painters in fifteenth century - and probably in later times as well - were familiar with the handling of fabrics. The document is also relevant because, among the types of fabrics listed, we can find flags and sails (*bandiere, penoni*), that were presumably re-used sometimes to prepare large-scale supports for paintings. In Venetian dialect, *penone* means sail - literally it is the horizontal wooden element that sustains

²³⁵ A. Manno (1995), p. 156. The manuscript is BMC, Cl. IV, 163.

²³⁶ “Tutti i depentori li quali taiano de taio, over cuseno de ponto bandiere, penoni, covertori [coperte ma anche tendoni], e tutti i altri lavorieri de taio, over de ponto diebano intrar in el mestier dei coltreri”. The *Mariegola del Collegio dei Pittori* is BMC, Cl. IV, n. 163 in the Correr Library. The mention to this dispute can be found in Elena Favaro's book. The reference can be found in the chapter III entitled “L'Artigiano e l'Azienda nell'ambito della Corporazione”, specifically in the paragraph “Trasgressioni alla Disciplina dell'Arte”, where the scholar collects informations about transgressions and swindles of the corporation's statute. Elena Favaro, *L'arte dei pittori in Venezia e i suoi statuti* (Olschki: Firenze, 1975), p. 68.

the sail.²³⁷ We cannot be absolutely sure that Venetian painters in 1443 systematically adopted second hand fabrics, originally used as flags and sails, as support for their paintings, or at least not for the most important ones. Nevertheless, this document sheds some further light on the variety of activities carried out by painters, who were also committed in cutting and sewing fabrics. The final predominance of *depentori* over *coltreri* might mean that painters could continue to handle fabrics in their workshops, with no constraints. As it will be possible to read in the section of this work dedicated to the interviews with restorers, Dr. Jill Dunkerton believes that the re-use of flags as painting support is not to be considered a common practice in Renaissance Venice. Perhaps this economic solution was adopted sometimes to produce ephemeral or less important paintings, but not for very illustrious public commissions.

Conclusions

This chapter demonstrates that Venetian artists of the Renaissance considered easy handling and safe transport to be relevant aspects of production early on in the process. Andrea Mantegna's own words about his choice of the most suitable pictorial support for transport are extremely relevant for this research and should be taken seriously, notwithstanding diverging opinions of various scholars. Like Mantegna, other artists often chose to paint on canvas in order to facilitate packaging and transport. As for the most suitable preparation to be applied on the canvas before painting, many recipes were circulating among artists and were written in treatises of the time. The recipe recorded later by Giovanni Battista Volpato but used by Tiziano Vecellio throughout his career, that is a thin layer of plaster, allowed an easier rolling up and was much more used than other formulas. Vasari's recipe based on flour-glue, on the contrary, was apparently never used. In

²³⁷ "Penon: quello stile o asta di legno piu grosso nel mezzo e meno ai lati, che sta attraverso gli alberi della nave, ed a cui s'attaccano e sopra e sotto le vele". Giuseppe Boerio, *Dizionario del Dialetto Veneziano* (Firenze: Giunti Martello, 1983), p. 489. About "pennoni" I received some bibliographical indications from Guy Fassler (Ph.D student in Medieval History at St. Andrews University), who kindly indicated to me some references to the term *Pennoni* in chronicles describing revolts in Bologna in fourteenth century.

this chapter, we have also learned that, on occasion, Venetian painters illegally prepared the canvases within their workshops, cutting and sewing them as they pleased. The many, and severe, prohibitions that Venetian rulers insistently tried to impose with the aim of avoiding illegal trade of fabrics and to regulate the competition between the corporations, suggest that people adopted illicit behaviours very often.

Chapter III - Packing Material, Transport Procedures and Damage in Transit

Introduction

In this chapter I gather together and examine several types of documents, such as account books, payment records and correspondence. All these documents (presented in chronological order) contain information about packing material, transport procedures and damage in transit that occurred to paintings in the Renaissance. The main aim is to show that many materials were used to pack Renaissance paintings, including cases made of boiled leather, metal tubes for rolling canvases, and so on.

Despite the attention that paintings received most of the time, many accidents occurred during transit. Let's take the example of the breakage of a small devotional image by Neri di Bicci in 1454. The wooden panel had been secured between a pair of baskets on horseback. Unfortunately, at some point during the journey, a mule bumped into the horse, and — to quote Anabel Thomas — “shattered the little painting into several pieces”.²³⁸

Lorenzo Lotto's *Libro di Spese Diverse* is an important source, since the artist lists the materials he used to pack his paintings, including ropes to secure canvases to other objects in a load, and thin fabrics to cover the artworks during their journey.²³⁹ Another interesting case study is the packing of Albrecht Dürer's *Feast of the Rose Garlands*, that was prepared in Venice in 1606 and shipped to Prague on foot. In order to preserve the altarpiece from damage and water during the long journey, Venetian packers wrapped it in waterproof waxed cloths.²⁴⁰ Finally, the Tuscan documentation produced by the merchant Francesco di Marco Datini is presented here as a case-study from beyond Venice, since I think that it is beneficial not to constrain the

²³⁸ Thomas, Anabel, *The Painter's Practice in Renaissance Tuscany*, (Cambridge: Cambridge University Press, 1995), pp. 197-206.

²³⁹ Lotto, Lorenzo, *Libro di Spese Diverse*, 1480-1556, edited and transcribed by Floriano Grimaldi, Kati Sordi (Delegazione Pontificia per il Santuario di Loreto: Loreto, 2003).

²⁴⁰ Olga Kotková, *Albrecht Dürer, The Feast of the Rose Garlands, 1506-2006*, Národní galerie v Praze, 2006, p. 255.

theme of this research to a geographically limited vision. Therefore, the selected documents cover a wide time-frame, in order to present various painters dealing with problems of handling and transport, although their supports, painting medium and painting ground changed considerably across time.

III.1 Francesco di Marco Datini and the safe transport of paintings in fourteenth-century Tuscany

In an article published in 1929, Renato Piattoli collected several records about Francesco di Marco Datini and his business, devoting particular attention to Datini's relations with artists and artisans.²⁴¹ This section, based on Piattoli's article, presents the relevant passages about packing and shipping Datini's paintings.

Florence 1383: Niccolò di Buono waits for a carrier to send a panel painting to Prato

Around 20th January 1383, in Florence, the merchant Niccolò di Buono bought a wooden painting representing the Virgin for his friend Francesco di Marco Datini or, more probably for his wife Margherita. The artwork is described as square-shaped and composed of two parts. It cost Niccolò di Buono 3 *fiorini*. The low price and the rapidity of the execution indicate that the painting was probably painted by a young assistant in a painter's workshop, and might have been one of the products displayed for sale in the workshop. Two days later, a letter from the Florentine merchant Matteo di Lorenzo (Francesco's friend and associate) informed him about the acquisition of the painting. Matteo was sure that Francesco would be pleased by the beauty of the painting, as soon as he received it in Prato. In the meantime, Niccolò di Buono and his brother Lodovico had obtained the

²⁴¹ Francesco di Marco Datini (c. 1335 - 16 August 1410) was an Italian merchant born in the Tuscan city of Prato. The documents about Francesco di Marco Datini's business are all taken from the article written by Renato Piattoli, 'Un mercante del Trecento e gli artisti del tempo suo', in *Rivista d'Arte* XI (1929), pp. 221-253. All the mentioned letters are preserved in Arch. Dat., *Fond. di Prato*, cart. 329, M, II, 9 and in *ivi*, cart. 330, M, II, 10.

completed painting, and they started to organise the shipping. They asked Matteo di Lorenzo to send them a carrier (*veturale*), to collect the painting together with other undefined objects. They would consign to the carrier the present letter if they were unable to send it earlier. Here below is the relevant extract of the letter, dated January 20th, 1383: “We have purchased the woman's panel, and on Thursday it has to be completed, and it costs III *fiorini d'oro*. We think you will like it. Send to us him to whom we deliver it.”²⁴² Another letter, dated January 23rd, 1383, says: “We have the panel. We wait for the porter to come, to give him the panel and also this letter, if we do not send it before in another way”.²⁴³ The transport was most likely paid by Matteo di Lorenzo, since he was responsible for hiring the carrier. As for the packing procedure and materials, they are not described (nor mentioned) in the record. We might assume that the painting was already packed at the carrier's arrival, together with the other objects destined for Matteo di Lorenzo. Other records presented below about Francesco di Marco Datini's activity are more informative about packing materials used to prepare paintings for transport.

Florence 1383: two wooden panels packed in a case of boiled leather

On April 18th, 1383, another wooden painting commissioned by Francesco di Marco was in the process of being made in Florence by an unknown painter. It consisted of two panels: the first one representing the Pietà with the Virgin, and the second one with St. John. Since Francesco di Marco had moved from Prato to the nearby town of Pistoia to escape from the plague, this Florentine commission was closely supervised by Domenico di Cambio, his associate and friend. Domenico wrote to Francesco asking for instructions on how to pack the painting for transport. Specifically, Domenico wonders if Francesco wants the two panels to be anchored together by the painter

²⁴² “La tavola di Donna abbiamo conperata e giovedì de' essere conpiuta, e costa fiorini III d'oro. Avisiamo ti piacerà. Manda a chui la diamo.” R. Piattoli (1929), p. 225. In the text, “Donna” could mean the final owner of the painting, Donna Margherita (Francesco di Marco's wife), or the subject of the painting (Madonna).

²⁴³ “La tavola abbiamo. Aspetiamo pure che ‘l veturale venga per dargli la tavola e anchora questa lettera, se per altro prima non ma mand(iamo).” R. Piattoli (1929), p. 225.

(*ghanghorare insieme*). In fact Domenico believes that, that way, the painting would be much safer (*Quanto a mio parere, ella istarà pure meglo*). The verb *ghanghorare* is a vernacular expression deriving from the term (also vernacular) *ganghero*, that could be translated as “hinge”. The technical choice given by Domenico to Francesco reveals that he was aware of the safest way to transport the painting. On the other hand, the letter also reveals that the final decision was the responsibility of the patron Francesco di Marco. The painter, in the letter, is presented as the simple maker of the work. One cannot exclude, however, that the technical suggestion about the packing was given to Domenico by the painter himself. We do not know whether the two pieces of wood were connected together for transport, we may suppose that Francesco accepted Domenico’s suggestion, and that the panels travelled already assembled. Domenico di Cambio also wants to commission a case made of boiled leather (*farò fare una guaina di chuoio chotto*), to further protect the paintings. Domenico specified that such protective envelope would prevent possible water damage encountered along the way. Here below are Domenico’s own written words:

“Tell me if you want them (the two panels) to be anchored together. In my opinion, it (the painting) will be even better. Then I will order a case of boiled leather, so you will be able to carry it (the painting) everywhere without any hindrance, and it won’t be damaged by the water encountered during the journey.”²⁴⁴

As we can see, at this stage of the production, the subjects of the panels were not yet perfectly defined. In fact, Domenico is writing about the Pietà with the Virgin on one side and Saint John on the other side, as the subject of one of the panels. On the other panel, the painter was going to represent figures of Saints of Francesco’s choice.

The use of boiled leather demonstrates the variety of materials adopted in packing procedures. Boiled leather was a very resistant and waterproof

²⁴⁴ “Ditemi se volete ch’io li faccia ghanghorare insieme. Quanto a mio parere, ella istarà pure meglo. Poi vi farò fare una guaina di chuoio chotto, che-lla potrete portare in ogni parte senza impaccio niuno, e no si potrà guastare per aqua che vi gunghesse a chamino.” R. Piattoli (1929), p. 232.

material used for many purposes, including suits of armour. It is important to observe that a merchant, such as Domenico di Cambio, showed expertise about packing the painting. Many merchants were indeed familiar with the shipping of luxury goods, and they had to know how to pack them properly for safe transport. In many cases, merchants were also responsible for the objects' perfect condition, and they would have been responsible for any damage incurred in transit.

Florence 1398: packing and transport as a “spiritual exercise”

At the beginning of 1398 fra' Bonifacio was in Florence, where he commissioned a very expensive altarpiece from the Florentine painter Mariotto di Nardo. The overall cost of the wood and the painting was around 82 *fiorini*, 60 of them were for the painter. Since the prior had to leave for Corsica to take care of his convent, the commission was supervised on his behalf by the merchant Silvestro Nardi, an associate of Francesco di Marco Datini. But from Corsica, fra' Bonifacio continued to devote attention to the commission. On April 20th, 1398 he wrote to two of Datini's men, Manno di Albizio and Lodovico Marini, exhorting them to help Silvestro Nardi in his role as supervisor. Among the other requests, fra' Bonifacio wanted the painting to be safely shipped from Florence to Pisa, and then from Pisa to Corsica. Written in April, the letter only arrived at the destination in July.²⁴⁵ As Anabel Thomas has commented in her book, “it is significant that Bonifacio addresses Lodovico and Manno as *Fratelli carissimi* and that he describes their task as a spiritual exercise (*questi sono esercitii spirituali et buoni sechondo Iddio*) [...] Essentially, Lodovico and Manno's ‘spiritual exercise’ concerned money and transport.”²⁴⁶ In this case, a greater importance seems to be attached to practical packaging and transport operations.

²⁴⁵ R. Piattoli (1929), p. 237-239, the full text is transcribed in documents II and III at the end of the article.

²⁴⁶ A. Thomas (1995), p. 201.

Florence 1401: packing Giovanni di Tano Fei's altarpiece for transport to Corsica

In 1400, the two merchants Francesco di Marco Datini and Ambrogio di Meo decided to honour the memory of their associate Manno degli Agli. To do so, they donated fifteen *fiorini* (ten and five respectively) to friar Bonifacio di Sandro Ruspi, the already mentioned guardian of a Franciscan convent in Corsica. Fra' Bonifacio was very pleased to spend the donation on a wooden altarpiece for the main altar of the church. The altarpiece was commissioned from the Florentine painter Giovanni di Tano Fei, who was in close relation with Francesco di Marco Datini's associate Domenico di Cambio. In Fiesole, Domenico di Cambio helped the friar stipulate the contract with the painter. Then, fra' Bonifacio left for Corsica. Once the altarpiece was completed (the subject is unknown), it had to be delivered to the convent. In a letter written on September 20th, 1401, Fra Bonifacio informed the men of Datini's shop in Pisa that they were going to receive the altarpiece from Florence. In fact, the friar was about to write to Florence, to ask them to ship the painting: "Therefore I write them, if it (the painting) is ready or once it will be ready, to send it to you so that it comes well safe".²⁴⁷ As for the cost of transport, fra' Bonifacio supposed that it was the responsibility of Francesco di Marco Datini, who had already paid for the painting: "And I think - as I write to Francesco - that since he paid for it, he will also pay the costs (of transport) up to there".²⁴⁸ The friar informed Datini's company in Pisa that, once the painting arrived there, it was important to keep it safe until the arrival of the porters from Corsica. More precisely, the altarpiece would be loaded on the boat by some wine porters described by the prior as kind friends, happy to be useful to the Franciscan monastery of their island: "From here the boats with wines will arrive there [...] And since the porter is our friend and he comes

²⁴⁷ "Pertanto scrivo loro, s'ella è fatta o quando sarà fatta, a voi la mandino per modo che venga ben salva." R. Piattoli (1929), p. 239, the full text is transcribed in document IV.

²⁴⁸ "E penssomi, et così scrivo a Francescho, che poi che-ll'à pagata, pagherà anchora le spese sino cosstì." R. Piattoli (1929), document IV.

there with the wine, we spoke with him and we begged thus [...]”.²⁴⁹ This was without any doubt a convenient system of transport, since the wine porter had to go to Pisa anyway to sell their wine.

From Corsica, fra’ Bonifacio provided precise instructions on how to pack Giovanni di Tano Fei’s painting for transport to Pisa: the artwork had to be wrapped in straw and rugs. “We beg you, if it [the painting] is done, in service of God and Charity, to rapidly send it to your men in Pisa, tied and wrapped in straw and rags, as you know better than me that it should arrive without any damage, and as you are used to ship them to other destinations.”²⁵⁰ The friar was aware of the familiarity that the merchants had with the packing of precious paintings. In fact, asking them to pack the painting carefully, he added “as you know better than me” (*chome sapete meglo di me*), and “as you are used to ship them for other destinations” (*et come altrove sete usi di mandarle*). Together with the necessity of safe transport, fra’ Bonifacio stressed the need for good weather for the delivery of the painting: “And to ship it to Pisa with good weather, so that it does not get damaged”.²⁵¹ But the painter Giovanni di Tano Fei took his time to complete the work that, by contract, was expected in November 1402. In a letter sent to Datini’s company in Florence, and dating to November 15th of that year, fra’ Bonifacio once again mentioned the painting. By that time, the political situation forbade the safe shipping of the altarpiece from Florence to Pisa, since a Florentine product would have been confiscated in Pisan territory.²⁵² Bonifacio suggested sending from Florence to Lucca first, and then from Lucca to Pisa. He also specified the names of trusted individuals to handle the artwork. As for the packing, the altarpiece would have to be wrapped and put in a case:

²⁴⁹ “[...] et di qui cosstà verranno ormai le barche cho’ vini [...] E perchè l’aportatore di questa è nosstro amicho et viene in cosstà chon vino, gli abbiamo detto er pregato così [...]” R. Piattoli (1929), document IV.

²⁵⁰ “[...] noi quanto possiamo vi preghiano, s’ella fossi fatta, che prestamente in servizio di-dDio e della charità la mandassi a Pisa a’ vosstri legata et involglata di palglia et chanovacci, chome sapete meglo di me che vuole venire perchè non si guassti, et come altrove sete usi di mandarle.” R. Piattoli (1929), document V.

²⁵¹ “[...] et di mandarla a Pisa a’ buoni tempi, che non si guasti [...]” R. Piattoli (1929), document V.

²⁵² This was due to the strong hostility that Pisa and other towns under control of the Duke of Milan manifested towards Florence after the death of Gian Galeazzo Visconti on September 3rd, 1402. R. Piattoli (1929), p. 242.

“Send it well tied and embedded as you know the way it wants to come, so that nothing interferes with its preservation”.²⁵³ Bonifacio added that the painter himself (Giovanni di Tano Fei) would be able to give precious advice regarding the packing procedure. The prior finally expressed his intention to write the artist a letter, to inform him about the situation. At this point of the story, Bonifacio only had to be patient, and wait for the painting to arrive at the monastery, hopefully safe. The friar was quite old and was probably losing his eyesight. He asked for one more thing from Francesco di Marco: a pair of spectacles. They might have been useful to better appreciate every detail of the painting.

III.2 Lorenzo Lotto and “la portadura” of his paintings: notes on transport in *Libro di Spese Diverse*

An analysis of Lorenzo Lotto’s account book from the point of view of packing and transport can reveal interesting information. Lotto had Venetian origins, and during his youth he trained in Venice as a painter. It is known that he had a troubled career, that caused him frustration and humiliation, and obliged him to deal with economic constraints. In order to find commissions and sell his paintings, Lotto moved to many different cities during his life.²⁵⁴ Therefore he was familiar with travelling and moving procedures. As for his paintings, they also were often shipped to various destinations, or sent to other centres to be shown and sold. However, there aren’t yet specific studies devoted to packing and transport in Lotto’s workshop. First-hand information can be found in the large number of notes that Lotto takes in his *Libro di Spese Diverse*²⁵⁵, in which he registered his personal income and expenditure

²⁵³ “[...] et ben legata e inchassata chime sapete il modo che vuole venire la mandate, e che-ssi conservi senza impedimento [...]” R. Piattoli (1929), document VI.

²⁵⁴ He was trained in Venice and went back to his city several times, with the hope to see his talent recognised and appreciated. He also lived in Treviso, Roma, Bergamo, Ancona and other centres of The Marches. At the end of his life, he decided to retire to the Holy House of Loreto. Peter Humfrey, *Lorenzo Lotto*, (Yale University Press: 1997).

²⁵⁵ Lorenzo Lotto, *Libro di Spese Diverse*, 1480-1556, edited and transcribed by Floriano Grimaldi, Kati Sordi (Delegazione Pontificia per il Santuario di Loreto: Loreto, 2003).

during the last two decades of his life (1538-1556). In this section of my work I aim to highlight the passages of the *Libro di Spese Diverse* that give relevant information about moving procedures. After a list of the notes about Lotto's paintings shipped to various destinations, I present his annotations about expenditure for transport, and about boats and porters used and hired by the painter. Then I present the records mentioning specific materials used by Lotto for packing operations. Finally, two significant records of the account book attest to the attention put by Lotto in transport procedures, in order to protect his paintings and avoid damage in transit.

Shipping Lotto's paintings

In a note dated October 1544, Lotto writes that a portrait of misser Lodovico Agolante will be shipped to the patron in Venice with other unidentified objects, for reasons of convenience: "For the convenience of sending it (the portrait) to Venice with other things".²⁵⁶ Thanks to this and to other first-hand annotations contained in *Libro di Spese Diverse*, we know that Lorenzo Lotto pays attention to his own expenses, among which there is what he called "la portadura"²⁵⁷ that means the transport. He wants his products to arrive safely, and he tries to ship them by the cheapest and most convenient way. In several excerpts of *Libro di Spese Diverse* we read about paintings shipped to Loreto, Treviso, Brescia, Rome and Messina. These annotations show how familiar the painter was with shipping procedures.

Many other notes contain information about paintings shipped from Lotto's workshop to various destinations. In May 1544, Lotto is based in Treviso, he ships two paintings to Venice to sell them. Giovanni Maria de Lignago *indorador* in San Lio receives the paintings in Venice, and helps Lotto with the sale: "In May 1544 I have to give (pay) to *misser Joan Maria da Lignago*

²⁵⁶ "Adì [...] otobre die dar el dito misser el mio resto con el quale remassi voler ducati 10 del ditto retratto, et luj me promesse da gentilhommo a bona fede contentarmi; e non si trovando denarj, non restassi jo levarli el quadro per comodità de mandarlo a Venetia con altre robe, et che inanti Natale mi faria haver/ el mio integro pagamento, et su la bona fede jo li credeti et deti el/quadro senza altro segno o scritto L 62 s -81." *Libro di Spese Diverse*, f. 68v.

²⁵⁷ The word "portadura" means "transport", and can be read in Lotto's handwriting, *Libro di Spese Diverse*, precisely at f. 195r and f. 196r. In other notes - precisely at f. 195r and f. 195v - the painter uses the term "condutura".

indorator in San Lio in Venice for two paintings sent to him from Treviso, in order to sell them on my behalf”.²⁵⁸

In the following record, dated November 1545, Lotto records that five paintings have been successfully delivered to *misser Giovanni Maria* in Venice. The first two paintings are the Nativity and the Saint John the Baptist. Another two are, as the painter writes, similar to those that he sent to Sicily. The fifth and last painting represents the Sacrifice of Melchisedech, as we read in the annotation: “In November 1545 I note how *misser Joan Maria indorator* had received the above said five paintings, that are the nativity imagined at night, the Saint John the Baptist baptising Christ, painted by me. He also received the other two paintings similar to the ones that I sent to Sicily. And (he) also received the painting of the Sacrifice of Melchisedech”.²⁵⁹ Unfortunately the middleman (*Giovanni Maria*) did not manage to sell the paintings, and he had to return all of them to the painter in November 1545, when Lotto went back to Venice. The painter took the occasion to collect from *Giovanni Maria* other paintings that had remained unsold: “In November 1545 *misser Joan Maria dorador* has to be paid for returning to me the *contrascritj* paintings on my arrival in Venice since he did not have success, also together with these I collected from him other of my paintings that he had had previously”.²⁶⁰

As for the above mentioned two paintings of the same subject that Lotto sent to Sicily to sell, they are mentioned in another note of the account book. This time the middle men are two Venetian jewellers: Lauro Orso and his master

²⁵⁸ “Adì ... maggio del 1544 die dar misser Joan Maria da Lignago indorator a San Lio in Venetia per doj quadri mandatij de qui da Treviso per farmeli vendere...”. *Libro di Spese Diverse*, f. 59v. The note continues saying that the first painting represents the scene of the Nativity in a nocturnal setting, and the second represents Saint John the Baptist baptising Christ.

²⁵⁹ “Adì ... novembre 1545 notto como el contrascrito misser Joan Maria indorator die haver fato boni et receputi li diti quadri contrascritti pezzj n. 5 cioè el presepio finto de note, el san Joan Baptista che bateza Christo, li proprij de mano mia. Etiam li altri dui quadri simili hebbe che io mandaj in Sicilia. Et havuto medesimamente el quadro del sacrificio de Melchisedech.” *Libro di Spese Diverse*, f. 60r.

²⁶⁰ “Adì ... novembre del 1545 die haver el contrascrito misser Joan Maria dorator per li contrascritj quadri havermeli restituitj ala mia venuta in Venetia perché lui non haveva fato lo efetto, etiam insemi con questi retolsi da lui altri mei quadri che lui haveva havuto per lo inantj”. *Libro di Spese Diverse*, f. 61r.

Bortolamio Carpan. Lotto is not in charge of deciding the cost of his paintings, and he just limits himself to suggest for them a price that is “honest”:

“In December 1544 I have to pay misser Lauro Orso jeweller, trained by mastro Bortolomio Carpan jeweller in Venice, for two paintings, one of the Nativity imagined at night and the other of Saint John the Baptist baptising Christ, that he received from me to bring to Sicily in Messina to sell them on my behalf, and he (Lauro Orso) received them from the above said misser Bortolamio, and their price was put into his will at his best, and their worth was 40 *scudi* for an honest price”.²⁶¹

In all these cases, Lotto has to pay for their transport. In unsuccessful cases, he must also pay to have them back.

A note dated 1550 (1549) attests that Lotto had previously sent small paintings from Venice to Loreto, in order to sell them in the shop of Agostino Philago *merzar*. “I have to give to Agostino Philago *cavalier lauretano, merzar* in Loreto, for the small paintings sent from Venice to sell in his shop on my behalf...”.²⁶² In the next lines Lotto records that unfortunately none of the paintings have been sold, and some have been returned to him.

In another note we read that on 2 December 1551 Lotto shipped from Ancona to Rome a bale containing six paintings to be sold in the shop of the goldsmith Francesco de la Rocha: “...on 2 December (I have) sent a bundle to Rome to the above said (Francesco de la Rocha) with my paintings to be negotiated for sale [...] the number of paintings and their prices that is

²⁶¹ “In Venetia a dì ... decembre de 1544 die dar misser Lauro Orso gioillier alevato de mastro Bortolamio Carpan gioillier in Venetia per due quadrij de picture uno de un presepio finto de notte, l’altro de un san Joan Baptista che bateza Cristo i quali hebbe per mio cunto da portar in Sicilia a Messina per venderli per mio cunto et li hebbe da misser Bortolamio sopra dito et el precio fu posto in suo arbitrio como meglio poterà, et veramente *valevano a honesto precio scuti quaranta*.” *Libro di Spese Diverse*, f. 69v.

²⁶² “...die dar misser Agostino Philago cavalier lauretano, merzar in Loreto, per quadreti de pictura mandatij da Venetia per farne vendita in la sua botega per mio cunto...”. *Libro di Spese Diverse*, f. 5v.

six...”²⁶³ The term “bala” used by Lotto means “bundle”, and suggests the idea that the six paintings were somehow packed all together and shipped as a single unit. The bundle with the paintings was probably transported on a wagon drawn by mules, since the annotation reads: “They (the paintings) were sent together with the *memorial* via the mule driver Antonio da Fiorenza, and paid”.²⁶⁴ The word “muladero” is a dialectal form for “mulattiere”, that is a driver of a wagon drawn by mules. In a following note dated February 13th, Lotto records the sum (mezo scuto) spent to carry the bundle with the six paintings in Rome from place to place: “...half of a scudo spent for me in Rome in the transport of the paintings from place to place”.²⁶⁵ The bundle arrived in the hands of Francesco de la Rocha in Rome in December 1551, delivered by misser Francesco Petrucci together with some precious stones and cameos: “on ... December 1551 *misser* Francesco Petrucci delivered to the goldsmith mastro Francesco dala Rocha the parcel with the cameos, as I ordered via *memorial*, and the bundle with the six pieces of painting, sent all to Rome to make a profit”.²⁶⁶ But the painter fears possible damage: he does not trust the goldsmith’s sons, who have already caused some damage in handling. In order to protect his products, Lotto wants mastro Francesco to pass them to misser Pier Joanni da Viterbo: “And since mastro Francesco

²⁶³ “adì 2 dicembre mandato una bala in Roma al sopradito con mie quadri da esser negociati in vendita [...] il numero deli quadrio et precij videlicet n° sei...” *Libro di Spese Diverse*, f. 43v. The first four paintings represented respectively: the Virgin with the sleeping infant Christ, a landscape with a sleeping Apollo, Susan, the young Saint John the Baptist. They costed respectively: 25 scuti, 20 scuti, 15 scuti, 20 scuti. The last two paintings are described as small-size, and represented respectively the infant Christ with the symbols of the Passion, and Saint Mary Magdalene. They were to be sold together, and they costed 16 *scuti*.

²⁶⁴ “Quali fu mandati con el memorial per il muladero Antonio da Fiorenza et pagato”. *Libro di Spese Diverse*, f. 43v.

²⁶⁵ “...mezo scuto speso per me in Roma a trasportar li quadri da loco a loco...” *Libro di Spese Diverse*, f. 43v.

²⁶⁶ “adì ... dicembre 1551 misser Francesco Petrucci consegnò a mastro Francesco orefice dala Rocha la busta contrascritta con li camei come ordinai per memorial etiam la balla con li sei pezi de quadrij de pectura, mandatilj in Roma da farne rescita del tuto”. *Libro di Spese Diverse*, f. 44r.

puts my things in danger, due to the accidents occurred to his sons, I reclaimed everything off his hands...”.²⁶⁷

The price of transport: boats and porters

Other annotations in the *Libro di Spese Diverse* specifically concern the sums spent by Lotto to ship his paintings. They can be found in the section of the account book devoted to keeping record of the expenditure for his painting activity.²⁶⁸ In the following excerpts, several paintings are carried and transported, most of the times to be shown to possible buyers:

*“to have the portraits of Justinian and the Advocate transported so that they can be shown to Vendramin L - s 2”.*²⁶⁹

*“to bring the paintings to the Vendramin to show L - s 2”.*²⁷⁰

*“for the transport of paintings to the woodworker L - s 1 1/2”.*²⁷¹

²⁶⁷ “Et per causa de pericolarmi tal robe in maneggio de mastro Francesco orefece per desordeni cadutj de soj figlioli, jo li levai de man el tuto per favor del maestro di casa del signor Vincentio de Nobilj, misser Dario comesso in Roma al magnifico misser Pier Joanni da Viterbo agente dello illustrissimo signor sopradetto et con mie letere esso misser Pier Joanne hebbe li quadri dal ditto mastro Francesco orefece...”. *Libro di Spese Diverse*, f. 44r.

²⁶⁸ Lotto records in two distinct registers the expenditure for his painting activity (“per l’arte”) and for his personal necessities (“per uxo e vestir”), starting from the last page of his account book and proceeding backwards. In order to respect both the chronological order and the original numbers of the pages, the transcription of this part proceeds in reverse. This is why we find, for example, mention of f. 196 before f. 195, etc.

²⁶⁹ “per far portar li retrati Justinian e Avogaro per mostrar ali Vendraminj L - s 2”. *Libro di Spese Diverse*, f. 196r, note dated 2 September 1543.

²⁷⁰ “portar i quadri a mostrar al Vendramin L - s 2”. *Libro di Spese Diverse*, f. 196r. Note dated 2 September 1543.

²⁷¹ “per portadura di quadri al marangon L - s 1 1/2”. *Libro di Spese Diverse*, f. 196r. Note dated 28 October 1543.

“to send the paintings to the Sensa per messo apostata L 7 s -”.²⁷²

“transport of the St. Michael to Treviso L 1 s 6”.²⁷³

“bring the portraits to display them L - s 6”.²⁷⁴

“transport of the St. Michael to Treviso L 1 s 7”.²⁷⁵

“send paintings to Ca’ from Brescia to display them and put them in the square, transport L - s 14”.²⁷⁶

In the notes listed above, Lorenzo Lotto records his expenditures without specifying the means of transport adopted to ship his paintings. In the following notes, however, he explicitly mentions the use of boats and porters:

“bring the paintings in various places, boats and porters over several trips L 1 s 18”.²⁷⁷

²⁷² “per mandar quadri alla Sensa per messo apostata L 7 s -”. *Libro di Spese Diverse*, f. 195v. Note dated 15 April 1544. I have not found a clear translation for the expression *messo apostata*, although *messo* should mean “courier”, see M. Cortelazzo (2010), p. 821.

²⁷³ “condutura del San Michele in Treviso L 1 s 6”. *Libro di Spese Diverse*, f. 195v. Note dated April 1545.

²⁷⁴ “portar quadri de retrati per mostra L - s 6”. *Libro di Spese Diverse*, f. 195v. Note dated April 1545.

²⁷⁵ “condutura a Treviso del San Michele L 1 s 7”. *Libro di Spese Diverse*, f. 195r. Note dated April 1545.

²⁷⁶ “mandar quadri a Ca’ da Bressa per mostre e meter in piazza, portadura L - s 14”. *Libro di Spese Diverse*, f. 195r. Note dated April 1545.

²⁷⁷ “portar li quadri in diversi luoghi barche e fachinj più volte ... L 1 s 18”. *Libro di Spese Diverse*, f. 200r. Note dated 8 December 1540.

*“to bring the paintings at home on Thursday before Lent, decorate the house and return them back, boat and porters L - s 12”.*²⁷⁸

*“transport the painting with the Grazie and the one with the Venere towards, boat and porters L - s 9”.*²⁷⁹

*“bring the paintings back and forth to the Feast of the Ascension several times L 1 s -”.*²⁸⁰

*“bring the paintings to decorate the house for the second delivery of Armana, boat and porters L - s 8”*²⁸¹

*“for the hire (and porters) L - s 6”.*²⁸²

We can assume that the porters paid by Lotto - if they were not illegally employed by the painter - belonged to one of the corporations listed in my Chapter I (paragraph "Professional Porters"). Surely one of their tasks was to load and unload the works from the boat on which they were transported.

The following two notes are worth mentioning although they do not concern paintings. Indeed they appear in the register of the painter's personal needs (*“per uxo et vestire”*). They might be useful because they contain information about porters, boats and prices of transport: *“To transport myself in Treviso*

²⁷⁸ *“per portar li quadri a casa per la zobia grassa ornar la casa e tornarli a la volta, barcha e fachinj L - s 12”.* *Libro di Spese Diverse*, f. 199v. Note dated 27 February 1542. For the translation of *zobia grassa* see M.Cortelazzo (2010), p.1526. The translation of the expression *a la volta* would be “in direction of” - M.Cortelazzo (2010), p.1497 - in this case I translate with “back” given the verb *tornare* that means “to return”.

²⁷⁹ *“far portare el quadro de le Gratie et quello de la Venere alla volta, barcha e fachinj L - s 9”.* *Libro di Spese Diverse*, f. 199v. Note dated April 1542.

²⁸⁰ *“portar li quadri inanti e drieto alla mostra de Sensa in più volte L - s —”.* *Libro di Spese Diverse*, f. 199v. Note dated 24 April 1542. See M.Cortelazzo (2010), p. 857 and 1228.

²⁸¹ *“portar li quadri da ornar la casa al secondo parto de Armana, barcha e fachinj L - s 8”.* *Libro di Spese Diverse*, f. 199r. Note dated November 1541.

²⁸² *“per el nolo (e fachini) L - s 6”.* *Libro di Spese Diverse*, f. 195v. Note dated November 1544.

with my load in two boats, to load and unload L 22 s 18”.²⁸³ In the next note, a porter carries the trunk of the painter’s maid, dona Maria, who is leaving his house: “and I paid the porter who brought her chest away”.²⁸⁴

Materials used for packing in Libro di Spese Diverse

In the following excerpts Lorenzo Lotto records different materials used to pack his paintings. The painter writes the cost of rope used to tie his paintings. The note suggests that the paintings were also secured to other objects in the load: “rope to tie them with other things L 1 s -”.²⁸⁵ Together with other materials used to pack he seems to purchase thin wooden panels and thin pieces of fabric, both possibly used to cover paintings during transport: “2 thin panels for the paintings of the Old Testament to send to Treviso for the covering L - s 13”.²⁸⁶ The second passage is: “2 panels for the covering of the large cartoons to send to Treviso L - s 14”.²⁸⁷ Another explicit mention of the practice of tying paintings with ropes can be found in the following excerpt, dated 6th October 1542. Lotto records the purchase of ropes to secure paintings, and the expenditure for other ropes that might be useful to tie stuff. In fact, since the load might have partially changed during transit, additional ropes might have been useful to re-pack objects: “rope to tie paintings and other (ropes) if the load changes L - s 13”²⁸⁸ On the same day, another annotation testifies that shipped paintings could also have been covered with thin fabrics. Lotto pays for four thin canvases to cover paintings in transit to Treviso, and he also pays for the transport operation itself: “for

²⁸³ “per trasportarmi in Treviso con la mia masseritie in doj barche cargar e descargar L 22 s 18”. *Libro di Spese Diverse*, f. 199r. Note dated 18 August 1542.

²⁸⁴ “...et li pagajel fachino che portò via el suo forzier”. *Libro di Spese Diverse*, f. 81r. Note dated 11 October 1547.

²⁸⁵ “corda da ligarli con altre cose L 1 s -”. *Libro di Spese Diverse*, f. 198 r. Note dated 2 August 1542.

²⁸⁶ “Tavole 2 sotil per li quadri del Testamento Vechio a mandar a Treviso per coperto L - s 13”. *Libro di Spese Diverse*, f. 198 r. Note dated 2 August 1542.

²⁸⁷ “tavole 2 per coperto de lj cartoni grandi mandar a Treviso L - s 14”. *Libro di Spese Diverse*, f. 198 r. Note dated 2 August 1542.

²⁸⁸ “corde da ligar quadri et altre a bisogni per el mutar massariccie L - s 13”. *Libro di Spese Diverse*, f. 197v. Note dated 6 October 1542.

four thin canvases to cover the paintings to bring to Treviso and their transport”.²⁸⁹ Around fifty days later, we find another interesting and complete annotation about what seem to be thin panels to cover paintings destined to Treviso, the service of a porter, nails and *broche a corda* to tie the paintings, and also the hire of a boat: “for thin panels to cover to bring to Treviso with the transport of a porter, nails and *broche a corda* to tie them, hire of boat”.²⁹⁰ In January 1545 Lotto ships a painting to Venice to fra’ Lorenzo from Bergamo. The painter pays for what seem to be thin panels for the covering, and for the hire of a boat: “to send the painting to Venice to fra’ Lorenzo from Bergamo, thin panels for covering and hire of boat L - s 15”.²⁹¹ In April 1545, a boat is hired to ship to Venice the painting representing Melchisedech. Lotto takes care of the shipping procedure and, in addition to the porters, pays for bars and nails used in transport: “boat to send to Venice the Melchisedech L 3 s -; bars, nails and porters L - s 14”.²⁹² The following note is about what I believe could be a temporary stretcher that Lotto uses to protect a painting, maybe also during transport over a year later: “and for another temporary stretcher to protect the painting L 1 s -”.²⁹³

Lorenzo Lotto must collaborate to prepare a painting for transport

In a passage of the *Libro di Spese Diverse* dated March 1547, Lorenzo Lotto is taking a note about the contract he signed for the altarpiece of Mogliano, in the Marches. The painting is to represent five figures, and it will cost *130 scuti d’oro* to the community. According to the contract, Lotto must collaborate to

²⁸⁹ “per tele sotil n. 4 da coprir li quadri da portar a Treviso e portatura de le ditte L 1 s 6”. *Libro di Spese Diverse*, f. 197v. Note dated 6 October 1542.

²⁹⁰ “per tavole sotil da coperti de quadri da portar a Treviso con la portatura de fachin L 4 s 3; chiodi e broche a corda da ligarlj L 1 s 2 1/2; nolo de barcha L-”. *Libro di Spese Diverse*, f. 197r. Note dated 29 November 1542.

²⁹¹ “per mandar el quadro a Venetia a fra’ Lorenzo de Bergamo tavole sotil per coperto e nolo de barcha L - s 15”. *Libro di Spese Diverse*, f. 195v . Note dated January 1545.

²⁹² “barcha per mandar a Venetia el Melchisedech L 3 s -; sbare, chiodi et fachinj L - s 14”. *Libro di Spese Diverse*, f. 195r. Note dated April 1545.

²⁹³ “E per un altro telar postizo a defesa de la pictura L 1 s-”. *Libro di Spese Diverse*, f. 78v. Note dated August 1546.

prepare the completed altarpiece for its transport to Mogliano. The altarpiece has to be carried as safely as possible, at the expense of the community: “forcing me, once [the painting] will be finished, to help them to prepare it, so that it can be transported safely to the town, by the safest means possible, all at their expense”.²⁹⁴

Lorenzo Lotto is obliged by contract to carry a painting to Jesi at his own risk

In another contract, dated 20 August 1552, Lotto accepts the commission of an *ancona* with wooden ornaments, carvings, and parts covered in gold. The painter, who will receive in total 300 *scuti* for the painting, describes the work as expensive and arduous. Lotto is also obliged by contract to carry the painting to Jesi at his own risk, in the event that damage occurs to it during transport: “And I am obliged at my risk to carry it to Jesi in case that some damage happened, and (...) ...”.²⁹⁵ Probably the fragile carved and gilded parts described in the text framed the painting, and during transport they risked to break. This was the feared “nocumento”.

Transport of other artistic objects in Libro di Spese Diverse

As well as paintings, in the account book the transport of other artworks is recorded. More precisely, in 1541 Lotto received from Florence two sculpted reliefs representing a putto and two hands respectively:

²⁹⁴ “obligandomi quando la sarà finita, esserlj in aiuto a settarla da portarsi sicura al paese suo con quella più sicura comodità si potrà, tutoa sua spesa”. Libro di Spese Diverse, f. 63r. Note dated March 1545.

²⁹⁵ “Et jo sij obligato a mio rischio del condurla a Jesi in caso che cadesse alcun nocumento, et (...) andarmi a ponela insieme a suo costo de carezi et homini a tal bisogno...”. Libro di Spese Diverse, f. 99v. Note dated 20 August 1552. For the translation of *nocumento* (damage) see M.Cortelazzo (2010), p. 889.

“I have to give to Meo Florentine sculptor who works with Sansovino protto of San Marco lire 3 for sending to me from Florence a little putto and a pair of hands L 3 s -”.²⁹⁶

“I have to give to Meo sculptor for the rest of the transport of the little putto from Florence (...)...”.²⁹⁷

The transportation costs noted by Lotto, which are quite high, lend themselves to a comparative study with the price of other commodities.

III.3 When the mode of transport makes the difference: Tintoretto’s Transport Strategy for the Gonzaga Cycle

This section investigates to what extent the *mode of transport* could have affected the preparation of the paintings for delivery, and their physical arrangement in transit. Paintings on canvas, as we said, could have been moved in two different ways: attached to their stretchers, or detached from them and rolled up or folded. Was this choice somehow affected by the decision to transport a painting by boat, rather than by cart? I would like to present here some published records preserved in the Mantua State Archive, that inform us about Jacopo Tintoretto’s *Gonzaga Cycle* shipped in different ways, and that allow us to reflect on how the mode of transport could have been a deciding factor when safely packing a painting on canvas.²⁹⁸ In particular, the letters sent to Jacopo Tintoretto and Paolo Moro from Teodoro Sangiorgio in 1580, allow us to understand the technical differences between the transport of large-scale canvases by cart and by boat in sixteenth-century

²⁹⁶ “adì ... zenar die dar Meo scultore firentino lavora con il Sansovino protto de San Marco, lire 3 quali dette per parte e farmi venir de Firenze un putino de relevo et un par de mane L 3 s -“. *Libro di Spese Diverse*, f. 76 v. Note dated January 1541.

²⁹⁷ “adì ... april die dar Meo scultor per resto de la condotta del putino de Firenze scuti uno d’oro L 6 s 16”. *Libro di Spese Diverse*, f. 76 v. Note dated April 1541.

²⁹⁸ Luckily, the four paintings that form the cycle can still be admired in the Alte Pinakothek of Munich, where they have been the subject of meticulous technical analysis, all published in the book by Cornelia Syre and Andreas Burmester, *Tintoretto: the Gonzaga Cycle*, (Alte Pinakothek: Munich, 2000). The book also contains an appendix with the transcription of the letters examined here.

Venice.²⁹⁹ Before starting, it is important to remember that Jacopo Tintoretto's only documented excursions from Venice were to the court of Mantua in 1580 to install the canvases he had painted for the duke, and later in the same decade for the Holy Roman emperor and the King of Spain.³⁰⁰ It is well-known that between 1578 and 1580 Jacopo Tintoretto painted 8 large-scale canvases in his studio in Venice, known as *The Gonzaga Cycle* and chronicling the rise of the ruling family of Mantua.³⁰¹ They were commissioned by Guglielmo Gonzaga, the Third Duke of Mantua, in the years 1578 and 1579, to decorate the Ducal Palace in Mantua. They were conceived as two groups of four paintings for the *Sala dei Marchesi* and the *Sala dei Duchi*, respectively. They are not gigantic paintings but they are quite large-scale and they have been in the *Alte Pinakothek* in Munich since 1910. Tintoretto painted the series in his workshop in Venice, and after completion shipped the cycle to Mantua in two consignments (four paintings per shipment). Among the surviving letters,³⁰² there are three that contain relevant information about the transport procedure. The first letter is written by Paolo Moro, the Venetian representative of Guglielmo the Duke of Mantua and supervisor of the painter's work. Paolo visited the painter in his workshop in Venice, and he wrote to the Duke at the request of Tintoretto. The artist wanted to inform Guglielmo that the first group of four paintings was completed by March 1579. The painter was expected to leave for Mantua

²⁹⁹ C. Syre (2000), section 'Documents', p. 239 onwards.

³⁰⁰ N. Penny (2008), p. 134.

³⁰¹ Paintings of the first series (1578-1579): *Giovanni Francesco Gonzaga is created Margrave of Mantua*, 1433 (272.5 x 432 cm); *Ludovico II Gonzaga defeats the Venetians on the river Adige near Legnago*, 1439 (273 x 385.5 cm); *Federico I Gonzaga relieves the city of Legnano*, 1478 (262 x 420.5 cm); *Francesco II Gonzaga fighting in the battle on the river Taro against Charles VIII of France*, 1495 (268.5 x 422.5 cm). Paintings of the second series (1579-1580): *Federico II Gonzaga taking Parma*, 1521 (212 x 283.5 cm); *Federico II Gonzaga taking Milan*, 1521 (204.5 x 333 cm); *Federico II Gonzaga defending Pavia*, 1522 (210.5 x 276.5 cm); *The entry of the Infante Philip of Spain into Mantua*, 1549 (212 x 330 cm).

³⁰² Hereafter: ASMn.

before Easter, but he preferred to travel by carriage, rather on horseback.³⁰³
He suggested travelling with his own paintings by cart, after Easter:

Ser.mo Prenc. Sig.or et Patro mio Col.mo

Messer Giacomo Tentoretto hoggi e venuto à trovarmi, con pregar
ch'io scrivessi à V. A. come egli hà finito tutti quatro li quadri; ma
per essere inhabile al caualcare, dice che fatto le feste della S.ta
Pascha, che si potrà carozzare, esso verrà con li quadri; et in ogni
conto, starà à quanto V. A. li commandarà, qu.o ben volesse, che si
partesse inanzi Pascha...³⁰⁴

In May 1579 the four paintings of the first series were shipped to Mantua by wagon.³⁰⁵ Although Tintoretto was travelling with the paintings, they were damaged during transit, since they had to be removed from their stretchers to fit in the cart. Moreover, restretching them properly again represented, for the Mantuan patron, an additional effort that he wanted to avoid. For this reason, once Tintoretto received the second commission a few months later (in October 1579), he was given precise instructions about the shipping operations. He was asked to ship the second series by boat: in this way, the canvasses wouldn't have to be removed from their stretchers, and they could remain well stretched during the journey. The second letter was written in Mantua by Teodoro da Sangiorgio (who was responsible for the artistic projects at court), and sent to Jacopo Tintoretto. The letter is more specifically related to Tintoretto's paintings, and their transport. The interesting aspect is that the patron is perfectly aware of the advantages and disadvantages of two different systems of transporting the canvases, and he suggests the less risky

³⁰³ The document only states that he is unable to ride. This could be because, as a Venetian who does not travel much, the painter is unlikely to know how to ride; but it also could be on account of the bad weather (given that it is winter). The artist may have been riding as a passenger in an enclosed vehicle, carriage (*carrozza*). G. Boerio (1856), p. 141 offers a description of a *carrozza*: sort of cart with four wheels, covered, very well known. Then he offers a detailed description of all the parts of the vehicle. *Carozzare* means to travel in a carriage.

³⁰⁴ Paolo Moro to Duke Guglielmo, Venice, March 28th, 1579. C. Syre (2000), section 'Documents', p. 240, No. 4. The original is preserved in the ASMn, Archivio Gonzaga, busta 1511, fol. 43r.

³⁰⁵ For a summary of the events, see my timeline (fig.43).

solution for the paintings. In this case, if Tintoretto had shipped the second group of canvases using the same means of transport, they would have got damaged much more. Here are the relevant excerpts of the letter, with a translation of the significant words:

A m. Giacomo Tintoreto

Mag.co como frllò

Mi è piaciuto intendere dalle ure lre [vostre lettere] che li quadri siano finiti li quali sarà bene che faciate condure quantop.a in quà. Ma perche leuandoli dalli tellari sui quali gl'haveti fatti sarà causa che non li potrete poi mettere ben distesi in opera sarà bene che non li mouiate dalli detti tellari mà che faciate uenir per barca cosi interi et che ui racordiate che il S.or mio Ser.mo uole ueder le cose ben finite però che sarà bene mentre hauete li sod.i quadri cossi à ura comodità di finirli acciò non habbiate poi da stentare quando sarete qui, et se ci andrà qualche spesa come sarebbe di casse, o altro per portarli sicuri fattelo perche si rimborserà il danaro.³⁰⁶

Teodoro Sangiorgio also writes to Paolo Moro on the same day, to send him the same message: it will be better to keep the canvases on their stretchers, and to transport them by boat intact as they are. The text of the letter is the following:

Molto m.o et R.o S.or

M'e stato molto caro d'intendere dalle Lre [lettere] V.S. che li quadri li quali fa ms. Giac. Tintoretto siano finiti. Ma perche il levarli dalli tellari sopra gli sono fatti causa che non possino poi

³⁰⁶ Teodoro Sangiorgio to Tintoretto, Mantua, May 10th, 1580. C. Syre (2000), section 'Documents', p. 241, No. 14. The original is preserved in the ASMn, Archivio Gonzaga, busta 2953, libro 385, fol. 147r. I offer a translation: "Since removing them [the paintings] from the stretchers on which you [Tintoretto] painted them will entail that you will not be able to arrange them well-stretched, it is recommended that you do not move them from the said strainers, and that you deliver them by boat intact as they are. [...] If you need to spend some money in order to transport them safely, for instance for crates or something else, do it, because we will refund you the money."

accomodarsi ben distesi non vorrei che si mouessero dalli d. tellari
ma che si facessero condurre in barca cosi fatti persiò sia V.A. con-
tenta di vedere che cosi sia isseguito...³⁰⁷

Waterway transport could allow large canvases to be moved mounted on their stretchers. Contrarily, for transport on land, canvases had often to be removed from their stretchers, with high risk of damage. This is an important piece of information for us, since it could indicate that not every canvas had to be rolled up for transportation, as long as there was the possibility to load it on a boat. Of course, this was maybe impossible with very large canvases. Moreover, the previous record also confirms that the canvases were executed on their stretchers. An interesting mention to the frames, presented here below, suggests that they were made in a later time, after the painting:

Al Sig. Paolo Moro

...Può V.S. dire à mr. Giacomo Tintoretto, che non importara
ch'egli aspetti à venire colli quadri ch'ha fatti, passata la festa di S.
Rocco, perche tra tanto si farano far le cornici che le vano poste
d'intorno, egli però non dourà mancare in w.to tempo di riuederli
acciò li possi portar meglio finiti di q.el che furono gli altri.³⁰⁸

Finally, thanks to another letter of September 29th, 1580, we know that the second series had been successfully delivered to Mantua by boat. After considering the surviving documentation, I was curious to understand what kind of damage did the first series of the Gonzaga cycle incur. The letter mentioning problems in transit does not clearly mention the kind of damage that the paintings presented. Since they were removed from their stretchers and were probably rolled up or folded, it is likely that they got crumpled, and that the court wanted to avoid this same risk for the second group. In any event, they were obviously not packed with the required care. However, since

³⁰⁷ Teodoro Sangiorgio to Paolo Moro, Mantua, May 10th, 1580. C. Syre (2000), section 'Documents', p. 242, No. 15. The original is preserved in the ASMn, Archivio Gonzaga, busta 2953, libro 385, fol. 147r.

³⁰⁸ Teodoro Sangiorgio to Paolo Moro, Mantua, June 28th, 1580. C. Syre (2000), section 'Documents', p. 242, No. 16. The original is preserved in the ASMn, Archivio Gonzaga, busta 2953, libro 385, fol. 181r.

Tintoretto did not have much time to complete and ship his products to Mantua, we could also imagine that the paintings might have been packed when they were not completely dry. Packing a painting that was not completely dry was not an uncommon cause of damage and, after all, existing documents attest to the difficulty of drying oil paintings in Venice, due to the damp conditions.³⁰⁹ For example, we know what happened to the paintings of mainly mythological subjects (series of loves, planets, bacchanals, ages of man, elements....) sent by Paolo Fiammingo from Venice to Hans Fugger in Augsburg in the 1580's, for the hunting castle in Kirchheim (Swabia).³¹⁰ Hans Fugger commissioned these paintings via his agents the Ott brothers (in the Fondaco dei Tedeschi). In a letter Fugger recommended that Paolo Fiammingo should let the paintings dry a bit longer as the weather is very wet these days, and the process of drying is taking longer than usual.³¹¹ He has faith in Paolo Fiammingo and there is no hurry

³⁰⁹ Concerning the complex and long drying process of canvas paintings, Charles Robertson (senior lecturer in History of Art at Oxford Brookes University) shared with me a colourful childhood memory: "There is a technique for transporting wet oil sketches of scattering a layer of flour on the wet oil paint and then rolling up the canvases so they can be moved. The rolls have to be left until the oil paint is dried, and then unrolled, and I suppose the flour brushed away and the dry paint will adhere to the canvas. If the paint is not dry it will stick to the flour. I know about this from an anecdote of my grandfather, I imagine around 1920, The technique is probably described in nineteenth-century painting manuals. I think it is related to plein air painting and landscape sketching. I also imagine that drying time in sixteenth century may have been quite long but this presumably depends on the amount and type of oil."

³¹⁰ For all the information about this case study, I wish to thank Maria Aresin. For the paintings of Fiammingo in Kirchheim see Andrew John Martin, *Erdzeitalter, nicht der „Frühling“*. *Hans Fugger und die Zyklen Paolo Fiammingos*, in: Burkhardt/Karg, *Die Welt des Hans Fugger*, p. 197-216; Cat. *Renaissance Venice and the North* (Aikema & Co.); Fucikova/ Konecny: *Einige Bemerkungen zur Gesichtslegorie von Paolo Fiammingo und zu seinen Aufträgen für die Fugger*, in: Cat. *Welt im Umbruch*, p. 151-156.

³¹¹ The commission letters are preserved in the form of the so-called Kopierbücher in the Fugger family Archive in Dillingen. They are written in Old-German dialect and by a hand difficult to decipher but there is a summary book (Regesten) containing all of the letters that briefly explains what the content is. Maria Aresin kindly translated for me the content of the only letter in the group mentioning the slow process of drying paintings in Venice.

for the paintings to be delivered. Hans Fugger does not want them to arrive wet (as clearly had been the case before).³¹²

Going back to the damaged paintings of the *Gonzaga Cycle*, it is fundamental to look at the scientific evidence we possess, in particular at the x-ray photographs. Is there any visible difference in the condition of the two series that can demonstrate different handling during their first trip? According to the documents, the two series should present some differences. In fact, during the restoration of the cycle between 1994 and 1998, it was observed that the first series seemed to be in a worse condition than the second one, and that it might present evidence of rolling that could correspond to the damage mentioned by Sangiorgio in his letter. The scars are indeed many and serious, certainly not only due to procedures of rolling up, but also to bumps and folds that happened over time. The severe damage on the surface of the paintings of the first series is very visible. Unfortunately, however, the condition of the eight paintings has been altered by many subsequent journeys, and I do not believe it is possible to identify the damage of the initial transport and distinguish it from later lacerations. Traces of damage from rolling-up are also recognisable in the paintings of the second series, and this could have been caused by subsequent transport. In any case, we can observe the technical images available, and comment on them with the help of the existing publication.³¹³

Visible damage of transport

All these paintings were executed over a dark and coloured ground, applied as an extremely thin layer.³¹⁴ The painting representing *Giovanni Francesco*

³¹² The letter is in Volume II-2, on page 991 (letter 2214, 10th Nov. 1582). Except for the paintings of the seven planets now in the Munich Residence (Vierschimmelsaal and one in deposit at the Alte Pinakothek) the other paintings are not accessible: they are still in the Fugger Castle in Kirchheim, in the possession of the Duchess Fugger. The paintings in the Munich Residence are in the same state, or maybe slightly better preserved, as those in the Castle, a space characterised by dirt, cold, wet and no electricity in most parts.

³¹³ The images that I present are all taken from C. Syre (2000).

³¹⁴ "The ground has been so thinly applied that the canvas has the appearance merely of being coated and the weave structure remains clearly discernible". C. Syre (2000), p 122.

Gonzaga created Margrave of Mantua presents “long, diagonal and horizontally oriented lines of losses”, that have been indicated as the result of “improper handling while the painting was off the stretcher at some stage” (fig. 44). In addition, vertical lines of losses might relate to a rolling up procedure, probably the same transport operation which Sangiorgio complained about (fig.45)³¹⁵. The same kind of damage is described and visible in *Ludovico II Gonzaga defeats the Venetians on the river Adige near Legnago*, and in *Federico I Gonzaga relieves the city of Legnano*. The fourth painting of the first series, representing *Francesco II Gonzaga fighting in the battle on the river Taro against Charles VIII of France*, is in an even worse condition (fig. 46). We read that it is:

“the least satisfactory in terms of the state of preservation. As with the other three paintings from the first series, the presence of long vertical and horizontal runs of losses to paint and ground suggests that the painting may have been inappropriately handled whilst it was off the stretcher. The nature of these losses may indicate that the painting has been rolled at some stage for transport, and it is conceivable, in this case, that the painting may also have been folded”.³¹⁶

The second series starts with *Federico II Gonzaga taking Parma*, a painting in remarkably good condition compared to the others. As we can see in the detail of the x-ray there are very few losses (figs. 47, 48). The present condition of *Federico II Gonzaga taking Milan*, *Federico II Gonzaga defending Pavia*, and *The entry of the Infante Philip of Spain into Mantua*, is very similar to the first three paintings of the first series. Thanks to the x-rays we can observe lines of losses caused by rough handling and vertical lines due to the rolling-up at some point (although the studies do not comment on these losses - the damage of packing and transport is probably implied, since it has been described for the previous paintings).

An issue I came across concerned the damage of delamination. During my reading I found that Tintoretto experienced delamination or separation of

³¹⁵ C. Syre (2000), pp. 38-39.

³¹⁶ C. Syre (2000), pp. 70-71.

paint layers with the transport of the Gonzaga pictures.³¹⁷ However, this point was not very clear to me, especially in relation to transport procedures. Usually when people talk about delamination they refer to the flaking between the paint layers, when upper paint layers are flaking off the lower ones, which has often to do with the painting underneath being dry. During one of our conversations, I asked Jill Dunkerton whether the damage of delamination could be related, in her opinion, with transport procedures. Her answer was the following: “I do not think it is terribly relevant, and I do not really associate Tintoretto with delamination. There may be some delamination of paint for different reasons in the Gonzaga cycle, that is actually a kind of damage, but it is not a painting technique and it is not related to transport. The critical thing with transport is what is going on between the canvas and the ground. The paint may have other defects, but they would not be related to transport.”³¹⁸

My doubt regarding Tintoretto and *delamination* in the Gonzaga Cycle was due to difficulty in interpreting Robert Wald’s essay. It is not clear whether Robert Wald is referring to delamination or flaking between the ground and the canvas (which could be related to damage in transport) or between paint layers (more likely to be the result of defective technique). Wald only mentions that Tintoretto's paintings experienced delamination in transport, and maybe the way in which he expresses this is slightly confusing: “Artists discovered that certain adjustments needed to be made when constructing paintings that were to be rolled for transport. Tintoretto experienced delamination, or separation of paint layers, with the transport of the Gonzaga pictures”.³¹⁹ Cornelia Syre is more clear since she writes that : “...in addition to these changes within the paint layers, the paintings had been moved between seven documented locations before arriving in the Alte Pinakothek in 1910, and these various travels too have left permanent scars on the

³¹⁷ R. Wald in F. Ilchman (2009), p. 76.

³¹⁸ I had this conversation in London on 11th July 2018.

³¹⁹ R. Wald in F. Ilchman (2009), p. 76.

paintings”³²⁰. Therefore I deduce that Cornelia Syre does not relate the damage that occurred to the paint layers (delamination) to bad transport.³²¹

As I reported previously, waterway transport was many times preferred over transport on land, since it was safer, quicker and most of the time even cheaper.³²² We may well ask, however, why Jacopo Tintoretto did not arrange to ship his paintings to Mantua via river in the first instance. He was perhaps taking advantage of a cart that was about to leave from Venice to Mantua (possibly transporting other types of goods?), and decided to roll his first four paintings up and to add them to the load. This choice could have saved him from arranging and paying for a new shipping operation.

The *Gonzaga Cycle*’s case study is interesting also to start answering whether the paintings’ dimensions could affect the procedures of packing and transport. In fact, the second series is slightly smaller than the first one, and it would be tempting to suggest that the smaller paintings were not rolled up because of their smaller size. However, the difference in size is very slight, and I do not think that dimensions had such a crucial impact in this particular packing procedure. The different ways in which the paintings in the two series were packed, I believe, depended on the modes of transport. Considering this specific case, the idea we get is that not every canvas had to be rolled up for transport, unless of course it was a particularly large-scale work. In other words, if the eight paintings of the *Gonzaga Cycle* do not differ substantially in size, it is reasonable to conclude that the only factor that could have affected their packing and shipping is the mode of transport chosen for the journey, as we have read in the letters. Boats used for transportation

³²⁰ C. Syre (2000), p. 124, footnote 21.

³²¹ I have had a correspondence with the curators of the Alte Pinakothek in Munich (in particular Dr. Annette Kranz, Dr. Ulrike Fischer, Dr. Jan Schmidt), but unfortunately I didn’t receive further information about the physical condition of the *Gonzaga Cycle*.

³²² I tried to compare Tintoretto’s choice with other examples of paintings transported from Venice to Mantua via waterways. To mention an earlier example, in 1436 Zanino di Pietro decided to transport an artwork (now lost) to the church of San Cristoforo in Mantua via waterway. Later, immediately after the transit of the *Gonzaga Cycle*, in 1578 Paolo Veronese took care of the transport of his altarpiece for the Brothers of the Magdalene. We know that initially Veronese preferred waterways transport, but the monks opted for a transport via land, since in that case it was the cheaper solution. John Garton, *Paolo Veronese’s Art of Business: Painting, Investment, and the Studio as Social Nexus*, in *Renaissance Quarterly*, Vol. 65, No. 3 (Fall 2012), pp. 753-808.

purposes in Venice, known as *peate*, could have been large enough to contain the stretched canvases. To conclude, I'd like to underline that the change in the mode of transport, from wagon to boat, was not Tintoretto's idea, but the patron's. In many cases, painters devoted special attention to packing and shipping, and they made conscious decisions in order to preserve the integrity of their works. But in many others cases (like this one), the conservation awareness of the painter was not highly developed, and the patron was as careful as the painter, or even much more. In any case, damage in transit mostly (I am tempted to write 'always') depends on unprofessional and inattentive handling, that is not necessarily connected to the rolling up procedure. Independently of the dimension of the painting, safe and precise rolling up was certainly possible, provided that the canvas was gently and responsibly handled. As I will present in the following paragraph, another archival record proves that a rolled painting (in this case, two portraits) could be put in a metal tube to be safely transported.

Mantua 1579: two portraits for Tintoretto transported in a metal tube

In the same correspondence related to the *Gonzaga Cycle*, we read about two portraits representing the images of Federico and Francesco Gonzaga to be used as models for the cycle. Teodoro Sangiorgio writes to Paolo Moro saying that the two portraits were rolled up and intended to be transported from Mantua to Venice in what I believe was a metal tube. However, Sangiorgio had not yet shipped the paintings, since he had not received the metal tube (*canone di latta* in Venetian dialect) to put the paintings in, in order to protect them during transport. The letter reads as follows:

Haueuo scritto a ms. Giacomo Tintoretto di mandarli li ritratti del S. Duca Federico et Francesco, ma non essendosi puotuto hauere un canone di latta da metterli dentro perche non si guastassero non li mando per hora.³²³ Il che piacera a V.S. di farli sapere ma che se li

³²³ The English translation of Teodoro Sangiorgio's relevant words is the following: "since I couldn't obtain a metal tube in which to put them (the portraits), in order for them not to be damaged, I am not sending them for now...".

manderano colla p. comodita...³²⁴

According to Venetian dictionaries, the word *canone* (*chanón*) can have at least three different meanings: it can indicate a cannon, a drainpipe or an organ pipe.³²⁵ In all three cases it refers to a hollow cylindrical object of variable length. The term *latta* does not appear in Venetian dictionaries, but we can find the term *latòn*, meaning “brass”.³²⁶ A military cannon would probably be made of bronze. In the same folder of letters quoted above, a note reports payments to an organ builder, thus opening for us the appealing hypothesis that the object requested by Sangiorgio might have been an organ pipe.³²⁷ It might also have been one of the cases where paintings were transported in objects produced for other purposes, probably reused for packing. It is, in any case, significant that once again in this investigation we can emphasise information readily available but never really taken into consideration for the purpose of art transport.

III.4 The transport of Albrecht Dürer's *The Feast of the Rose Garlands* from Venice to Prague in 1606

The Feast of the Rose Garlands was painted in Venice by Albrecht Dürer in 1506, at the time of his second Venetian stay. The altarpiece was produced for the German confraternity of the church of San Bartolomeo di Rialto which is very close to the Fondaco dei Tedeschi and the Rialto bridge. The origin of the confraternity dates back to 1504, and in 1506 it had its official foundation under the name of *Scuola del Santissimo Rosario*, *Scuola dei Tedeschi* or *Scuola della Madonna Santa dell'Umiltà*. The Germans' chapel, where

³²⁴ Teodoro Sangiorgio to Paolo Moro, Mantua, October 27th, 1579. The transcription is in C. Syre (2000), p. 241, N. 10. ASMn, Archivio Gonzaga, busta 2953, libro 385, fol. 88v-89r. See also the summary in German in Eikemeier 1969, p. 78.

³²⁵ M. Cortelazzo (2010), p. 276.

³²⁶ G. Boerio (1856), p. 362.

³²⁷ I intend to return to the document for a more accurate inspection.

Dürer's altarpiece was installed in 1506, was situated to the right of the high altar, and it was widely visited by German travellers and merchants. For one hundred years the painting stayed in its original location, and was removed only in 1606 after its acquisition by Emperor Rudolf II. The exact reason why Rudolf II decided to buy the painting is not totally clear yet³²⁸, but we know that after the acquisition the painting was transported from Venice to Prague. Thanks to a letter written by Joachim von Sandrart in 1675 we know some significant details about this transport procedure: the large wooden altarpiece was carefully wrapped in cotton and carpets and protected by waxed cloth, then it was "carried by strong men on poles the whole way to the Imperial Residence in Prague".³²⁹ Andrew John Martin publishes the original letter.³³⁰ In addition to Sandrart's letter, we also have four letters written in 1606 by the Imperial secretary in Venice Bernardino Rossi³³¹, who gives relevant details about the negotiations between the Patriarch (the church was under his direct control), the priests, and an unnamed agent of Rudolf II (probably the Venetian born merchant with German roots Hieronymus Ott, who was involved in shipping of many kinds of goods for the Fugger Company, and whose correspondence would be an interesting case study³³²). Thanks to these letters we know that the agent was responsible for sending the painting

³²⁸ For a detailed discussion of the story of the painting, as well as for an analysis of its reception in historical sources (Francesco Doni, Giorgio Vasari, Francesco Sansovino, Hans Georg Ernstinger, Heinrich Schickardt, Hieronymus Megiser) and information about the transport from Venice to Prague see the relevant essay by Andrew John Martin, *Dan hat ain quater befunden, in vnserer Capeln, von der Hand des Albrecht Dürers. The Feast of the Rose Garlands in San Bartolomeo di Rialto (1506-1606)*, in Olga Kotková, *Albrecht Dürer, The Feast of the Rose Garlands, 1506-2006*, Národní galerie v Praze, 2006, p. 255.

³²⁹ Letter written by Joachim von Sandrart in 1675, A.J.Martin (2006), p. 255.

³³⁰ A.J.Martin p. 67, from Joachim von Sandrart, *Teutsche Academie der Bau-, Bild- und Mahlerey-Künste*, Nürnberg 1675 (reprint Nordlingen 1994), 2nd part, 3rd book, p. 223.

³³¹ H. von Voltelini, *Jahrbuch der Kunsthistorischen Sammlungen des Allerhöchsten Kaiserhauses*, 19, 1898, pp. I-CLXXVII, there pp. LXIV-LXV, docs. 16608, 16609, 16617, 16618.

³³² See Christl Karnehm, *Die Korrespondenz Hans Fuggers von 1566 bis 1594. Regesten der Kopierbücher aus dem Fuggerarchiv*, 3 vols, München 2003; Andrew John Martin, *Hans Fugger und Paolo Fiammingo in Hans Fuggers Welt.*; Idem, *Jacopo Tintoretto: dipinti per committenti tedeschi in Jacopo Tintoretto nel quarto centenario della morte. Atti del convegno internazionale di studi* (Quaderni di Venezia Arti, vol. 3), Padova 1996, pp. 97-100, 309-311.

to Prague, and one of these (sent to the Imperial secretary Iohann Barvitijs) informs us about the preparation for the transport. On April 21 the agent was in possession of the altarpiece, and the plan was to transport it via Augsburg, certainly by horse-drawn cart.

German porters get drunk

A letter dated the next day proves that this plan was suddenly cancelled, and the new plan for the painting was to be carried by the porters of the *Fondaco dei Tedeschi*³³³ on foot, on the direct route throughout the Alps. However, I have some doubts regarding the identity of the porters. I am not sure that the painting was at the end carried by the German porters, since at the end of Bernardino Rossi's letter we read: "This morning I had the painting by Alberto Duto (Dürer) sent, and on Monday it will leave in your direction without going through Augusta, as I mentioned last night, having had to go so far as to get all the porters drunk, I mean the German porters (*fachini del fontico de Thedeschi*), to get it out of their hands. I am happy to have served in this way your Majesty, our lord, according to your taste. Venice, 22nd April 1606". I therefore assume that the painting was at the end transported by porters hired by Bernardino Rossi. It has already been considered in the previous pages that Venetian porters carried goods on their back, and that in this specific case the porters were probably four at least.³³⁴ Perhaps the decision to carry the painting via a direct route by foot was taken to avoid risk of further damage, because the painting was already in a disastrous condition in Venice due to humidity, salty air, floods and candle smoke. For the Scuola of San Bartolomeo, who also wanted to carry out a renewal campaign of the chapel, a very good reason to accept the Emperor's offer was the severe damage that the painting presented. Before the journey, the painting was probably restored in the six weeks between the sale and the transport.

³³³ "Questa mattina ho fatto espedir il quadro d'Alberto Duto et lunedì partirà a dirittura verso costà senza che vadi per Augusta, come accennai heri sera, havendo bisognato fin far un peccato d'imbriacar tutti li bastasi, cioè fachini del fontico de Thedeschi, come cosa loro per levar glielo dalle mani. Io mi rallegro d'haver in questo servito sua maestà, nostro signore, conforme al suo gusto. [...] Di Venetia li 22 d'aprile 1606". A.J.Martin p. 66.

³³⁴ A.J.Martin (2006), p. 255. For the quotation see p. 22 and 23.

Thanks to a comparison of routes taken by contemporary travellers, Andrew John Martin suggests that the painting must have been carried by boat from the *Fondaco dei Tedeschi* through the northern Venetian lagoon, then the journey must have continued by foot through the following places: Portogruaro - San Vito - Gemona del Friuli - Tarvisio - Villach - Klagenfurt - Sankt Veit - Neumarkt - Tauernpass - Liezen - Windischgarsten - Kremsmünster - Linz - Freidstadt - Kaplice (Gäplitz) - České Budějovice (Budweis). After its long journey and subsequent history, the altarpiece is securely preserved today in the National Gallery in Prague.³³⁵

III.5 Titian's Shipping Practices

Mention must be made of Titian's shipping habits, documented in letters regarding the paintings he made for the King of Spain Philip II. "When he was in Augsburg in 1551 Titian had made an agreement with Philip to supply him with paintings on a regular basis [...] His great series of *poesie*, taken from Ovid, were sent, together with religious pictures, to Philip until, with the dispatch of *The Rape of Europa* (Boston, Isabella Stewart Gardner Museum) and *The Agony in the Garden* (Escorial) in 1562, his obligations were complete. He was now more than seventy years old. But he continued to work for the Spanish king. The last painting he made for him was the *Saint Jerome in the Wilderness*, sent to Madrid in 1575, a year before he died during the plague on 27 August 1576".³³⁶ The first letter is written by Philip II and sent to Titian on May 4th, 1556. The king asks the painter to pay more attention to packing and shipping his works. In particular, the damage (initially

³³⁵ Information about the support of the painting is found in Olga Kotková (2006), p. 255. The support of the painting is a panel of poplar wood 162 cm high and 192 cm wide. It is glued together from 13 vertically oriented pieces. The width of an individual piece is in the range of 12.5 to 18.5 cm. At present the panel is about 10 mm thick (during some older repairs, considerable thinning of the panel was carried out). Its front face is not covered by a continuous canvas seal: vertical strips of canvas cover the joins between the individual parts of which the panel is composed. Before they were glued in place the appropriate part of the surface of the panel was roughened with diagonal scoring. The painting's Venetian origin influenced also the technology - apart from the use of poplar wood for the panel, this is also reflected in the presence of gypsum in the ground layer (with an admixture of natural chalk), and the frequency of natural ultramarine in the level of paint.

³³⁶ N. Penny (2008), pp. 203-204.

described as a "doble" - fold) that the canvas with *Venus and Adonis* had suffered had occurred at court, once the King's men "descogieron para verle".³³⁷ Thanks to Dalla Costa I know that the Spanish expression "descogieron" is obsolete, but it means "unrolling". The whole expression could mean that the damage was discovered at the court of Philip II, when he wanted to unroll the paintings to see them (*para verle*). The second letter dates to June 19th, 1559. Titian informs Philip II that the paintings representing *Diana and Actaeon* and *Diana and Callisto* are finished, and that he is waiting for instructions for their safe shipping from Venice, in order to avoid their loss³³⁸ - as happened to another painting made by him, representing *The Deposition from the Cross*.³³⁹ The king replied in person to Titian (July 13th) saying that he nominated García Hernández as the responsible person for the shipping procedure of the paintings. This was the king's reassurance: a special and precise route had been planned, and the paintings would be monitored during their journey thanks to the direct collaboration of several important people. Philip's words reveal his annoyance and disappointment regarding what happened to the *Deposition*. He adds: "And you will ensure that they are well placed in their chests and packed so that they do not get damaged in transit, and for this it will be well that you - who know it - arrange them with your hands, because it would be a great loss if they arrived damaged"³⁴⁰ On the same day, Philip II also sent Hernández a letter with extremely precise instructions for the transport of the artwork. Here is the original text of the letter:

"Ticiano me ha scripto como tiene acabadas dos pinturas de poesia, una de Diana en la fuente y otra de Calisto,³⁴¹ y dessea saber lo mismo que vos por

³³⁷ Lionello Puppi, *Tiziano. Epistolario* (Firenze, 2012), no. 183, p. 218.

³³⁸ Matteo Mancini, *Tiziano e le corti d'Asburgo nei documenti degli archivi spagnoli* (Istituto Veneto di Scienze Lettere e Arti: Venezia, 1998), p. 246-7.

³³⁹ This was a first version of the *Deposition* that is now lost, cfr. H.E. Wetthey, *The paintings of Titian I* (Phaidon, 1975).

³⁴⁰ "y procurareis que vaian mui bien puestas en sus caxas y enpacadas de manera que no se gasten en el camino, y para esto será bien que vos que lo entendeis las pongais de vuestra mano porque sería gran perdida que llegassen dañadas." Letter sent by Philip II to Titian (Gand, July 13th, 1559) in M. Mancini (1998) p. 251.

³⁴¹ Philip II is referring to Titian's letter of June 19th, 1559.

donde se han de encaminar porque no suceda dellas lo que de la otra que me endiastes por Alemania.³⁴² Yo le scrivo lo que será con ésta³⁴³, en que le digo que os la entregue a vos que terneis orden mía de lo que se havrá de hazer dellas, y assí os encargo que las cobreis luego y hagais que él mismo las ponga de manera que no puedan dañarse en el camino y la hagais muy bien enbolber y poner en suas caxas y encaminarlas al embajador Figueroa, juntamente con una carta que para él con ésta os envío,³⁴⁴ en que le ordeno que las enbíe a Cartagena, y procurareis que vaya de manera que no se gasten, que en ello me hareis mucho plazer. Assí mismo enviareis con la dichas pinturas al dicho embajador Figueroa otras caxas con los vidrios y cosas que Gonzalo Pérez os scrivirá de mi parte, y tomareis para ello ahí quatrocientos scudos y remitirmelos eys a pagar a Anveres, que luego mandaré que se cumplan. Y porque de Gonzalo Pérez lo entendereis más largo, a él me remito”.³⁴⁵

A general study about the transport of Titian paintings does not exist yet, despite the rich amount of surviving records about his painting activity. Every single known painting has been extensively analysed in its context, but the transport-factor has never been seriously considered. This simple observation is pretty self-explanatory of the potential research that could be done on this topic, and this is why I intend to return to this correspondence in the future.

Conclusions

My hope in presenting this group of documents is to encourage further study of the various practices of transport and handling adopted by painters beyond Venice. A potentially unlimited number of other documents may await retrieval interpretation. Research about transport of paintings can, therefore, assume a different perspective not only in relation to the type of documents that the

³⁴² Philip II alludes to the unlucky disappearance of *The Deposition of Christ*.

³⁴³ Previous letter in the correspondence.

³⁴⁴ Next letter in the correspondence.

³⁴⁵ M. Mancini (1998), p. 152.

scholar decides to analyse, but also (and mostly) in relation to the various research objectives animating his investigation. For example, it would be interesting to focus research on the modes of transport, as well as on the variety of materials used for packing operations. Distances and travel times are other interesting aspects still to be investigated, as well as accidents, piracy and acts of vandalism that affected paintings during their transit. Traveling outside city boundaries or by sea may have been considered dangerous for the risk of attack by pirates or highwaymen. For now, this chapter offers a first analysis of the range of most used materials to pack paintings, as well as the diverse result of transport procedures where different modes of transport were used, in addition to diversified behaviours of painters and patrons towards transport procedures. This interpretation was based on selected documents.

Chapter IV - The Damage of Transport: Case Studies from the National Gallery of London

Introduction

After considering in the previous chapters, the existing literature and a number of documents testifying the various procedures of transportation of paintings in the Renaissance, the main aim of this fourth chapter is to focus on the paintings themselves and, in particular, on the collection of Venetian Renaissance paintings preserved in the National Gallery of London. Relying on the published studies I aim to show how some aspects of their physical condition might be related to damage that occurred during operations of packing and transportation. While it is possible to recognise the damage caused by rolling or folding, a more complicated challenge is to understand when exactly the damage occurred in history, in other words to assign a date to the damage. This chapter is an excellent opportunity to use the knowledge gained during my previous research about transportation of paintings and apply it to analysing an existing collection. I am interested in paintings as physical objects, capable of providing us with information about their handling in the past. Without any doubt, canvas and panels are themselves valid documents to investigate, in order to examine physical signs left on them throughout history by transport. Given the importance of both archival documents and physical evidence, the most effective methodology to study the problem of artworks' transport is an integrated combination of these two records. The collaborative nature of this doctoral project is the reason why I have focused my investigation on the National Gallery's collection. However, the research that I am conducting on this select group of paintings could be considered a pilot project for further transport-oriented investigations of other artistic objects and collections. For example, I can draw attention to a selection of objects (say of Venetian provenance) and unravel their transport history and address issues such as: how were they handled and shipped in past centuries from the place of production to their actual arrangement in the collection? Do we have any documentary evidence (written or visual) about their handling? How many aspects of the object today might be conditioned by transportation problems (in other words, did considerations about

convenient transport influence the artist's choice of materials and techniques)? Do the objects show any physical evidence of damage caused by transport? Is this damage visible to the naked eye, or do we need technical analysis to study it? Observing different case-studies would considerably increase my knowledge about transport and mobility of artworks and could also inspire new questions and research directions.

Reading through the catalogues of the National Gallery's collection, I made an initial preliminary selection of paintings, in which I included all large-scale paintings (around two metres or more in height or width, or part of a large-scale polyptych), dating from the fifteenth and sixteenth centuries, by painters active in Venice. To refine my selection, it seemed natural to begin my research with *The Sixteenth-Century Italian Paintings, Volume II (Venice 1540-1600)*, as this study analyses the paintings attributable to Renaissance Venice. In particular, as we read in the catalogue, "The paintings catalogued in this volume were all made by artists who were active in Venice between 1540 and 1600. Among them only Jacopo Tintoretto, his son Domenico and Palma Giovane were Venetian by birth. Titian, Bordone, Veronese and Mazza came to work in Venice from the *terra ferma*. Schiavone came from one of the Venetian colonies, Giuseppe Salviati from Rome, Sustris and Paolo Fiammingo from the Low Countries. Only Jacopo Bassano, of the artists whose work is catalogued here, never lived in Venice, but he was represented in the city by his sons, three of whom settled there."³⁴⁶ Therefore, my study began with a careful reading of the catalogue, in which I selected all the relevant information regarding the paintings' transport history and the eventual signs of damage still visible on them. I also gathered information about the structure of their support, the type of preparation ground used by the painter for the *imprimitura*, as well as their history before arrival at the National Gallery. Again the catalogue informs us: "By far the majority of the paintings catalogued here crossed the Channel from France in the early years of the Revolution or from Italy and Spain after Napoleon's conquests."³⁴⁷ At this early stage of my inspection I did not know yet what I would find: the number of paintings I was interested in was very broad, and I

³⁴⁶ Nicholas Penny, *The Sixteenth-Century Italian Paintings. Volume II: Venice 1540-1600*, National Gallery Catalogues (National Gallery Company: 2008), p. XIII.

³⁴⁷ N. Penny (2008), p.XVI.

was open to conducting research in several possible directions. Obviously, another essential source for this research was the National Gallery Technical Bulletin that, among other things, provides a wealth of observations about the painting ground used by artists, and also catalogues the majority of Titian's paintings preserved in the gallery's collection. Regarding the kind of damage, I noticed that the marks visible on the artworks could be divided into four main categories: rolling damage, folding damage, unclear damage (this often means uncertainty between rolling or folding damage) and, finally, accidental damage.

I think it is important to point out that in many cases, when we refer to "transport damage", we should instead use the more specific expression of "packing damage". As the name implies, the "packing damage" is the damage caused by insufficient packing or a rough handling during the packing operations (for example, badly executed rolling-up or folding that left traces on the painting). We can instead talk about "transport damage" in the event that the painting, regardless of the type of packing, incurred in damage during its transit (accidents of any kind)³⁴⁸. In the course of my study I also realised that the rolling and folding procedures were not reserved only for so-called large-scale paintings, but were also commonly used to prepare smaller canvases for transport. In this chapter we will see examples of this statement. The paintings I examine in the following pages are the result of a second and more refined selection, which has restricted the number of paintings considered in my analysis. Within the previously selected group, in particular I chose those paintings that, according to the catalogue, show clear signs of damage due to transport, and allow us to have a clearer idea of this matter. I will present below these paintings in chronological order, divided into as many groups as there are different kinds of damage. The selection of the following specific paintings as case studies does not exclude the possibility of investigating other artworks belonging to the National Gallery's collection, if they are useful to obtain a clearer idea about damage from packing and transportation. The images related to this study - mostly details of the x-rays

³⁴⁸ To mention an interesting research about paintings moved (and damaged) during the Napoleonic Age: Nora Gietz, *Tracing Paintings in Napoleonic Italy: Archival Records and the Spatial and Contextual Displacement of Artworks*, *Artl@s Bulletin* 4, no. 2 (2016): Article 6.

of the paintings - are the result of my investigation of the National Gallery's conservation dossiers. Reading the National Gallery Technical Bulletin and the catalogue "The Sixteenth-Century Italian Paintings. Volume II, Venice 1540-1600", we can appreciate the museum's staff's deep interest in the problem of the conservation of paintings. Despite annotating some traces of damage caused by transport, this theme is not particularly emphasised nor specifically treated in detail. My collection of data is, therefore, the first attempt to expand research in this direction.

IV.1 Damage caused by Packing:

National Gallery's paintings presenting damage from rolling-up

As I have already observed, the rolling procedure is attested in Andrea Mantegna's words in 1477, when the painter writes that, in order to ship a portrait more conveniently, he could execute it on thin canvas and wrap it "around a little pole".³⁴⁹ Giorgio Vasari is another important source when he writes that wrapped canvases are easier to transport.³⁵⁰ These documents, in which the rolling procedure is explicitly mentioned, are precious and rare. Despite this apparent lack of occurrence of the rolling up procedure in written sources³⁵¹, it is clear that this packing technique has been adopted and maintained across the centuries. We can even say with certainty that the rolling practice very often represented the main method for preparing a canvas for its transport. One occurrence of rolling up found in the National Gallery catalogues, concerns a large format painting by Veronese.³⁵² In 1764 Francesco Bartolozzi was summoned by the king to Buckingham House,

³⁴⁹ See Chapter II.1, Panel or Canvas? The Best Painting Support for a Correct Transportation, paragraph entitled "Andrea Mantegna's Words about this Technical Choice".

³⁵⁰ See Chapter II.1, Panel or Canvas? The Best Painting Support for a Correct Transportation, paragraph entitled "Precious Historical Sources and Various Scholars' Opinions".

³⁵¹ Research into other types of sources could be more fruitful, such as diplomatic gift lists.

³⁵² This mention of the episode can be found in N. Penny (2008), p. XVI, where we read: "This episode is described in a footnote to an obscure publication many years later by someone who claimed to have witnessed it". The "obscure publication" is cited as "[Dollaway?] 1824" at p. XXXIII, footnote 8.

where a large canvas, perhaps executed by Paolo Veronese, had been placed on the floor to be judged. The king wanted to know if Veronese was really the author of the painting, and had called Bartolozzi as judge. As we read, “he showed scepticism and the king ordered the canvas to be rolled up and he left the room in silence”.

Another tale concerns Paolo Veronese’s *The Family of Darius before Alexander* (NG 294), a large-scale oil on canvas measuring 236.2 x 474.9 cm, and dating to 1565-7. Perhaps painted for Francesco Pisani and his villa at Montagnana, where it is recorded at his death in 1567. The strange story about how the painting came into Pisani’s possession is well known:

“Veronese was travelling when he was caught by bad weather, he asked for refuge in a country house of Pisani where he was made most welcome. During his short stay there he painted the painting and at his departure he left it rolled under his bed when he departed, and afterwards sent word to the Pisani that he had left something in payment for the cost of his stay.”³⁵³

The legend that Veronese painted the picture and left it rolled under the bed is obviously unlikely. Where did he find the canvas? Did he roll the painting up while still wet? The painting is too large to have been painted secretly. Moreover, this story is significant as it attests to the rolling procedure. Probably due to the fact that it hasn’t travelled much in the course of its history, the enormous canvas is relatively well preserved, it does not show traces of transport damage and in the catalogue we read that “it is considered to be one of the artist’s best preserved works”. It had been moved to Palazzo Pisani Moretta in Venice soon after 1629, presumably from the villa at Montagnana, was then recorded in the procuracy of S. Marco in 1691, from where it was moved back to Palazzo Pisani some time between 1691 and 1715. After 4 years of negotiations and for the exorbitant sum of £ 13,650 (Ruskin defined it the most precious Veronese in the world!), the National Gallery bought it in 1857 from the Pisani family, who still kept it in their

³⁵³ N. Penny (2008), p. 368. Primary source: Dézallier d’Angerville 1762, I, pp. 262-3.

Venetian palace.³⁵⁴ The painting had been restored in October 1770 by Giuseppe Bertani, and in 1800 by Lattanzio Quarena. Then, on March 31st, 1857 it was removed from its stretcher and rolled. Evidently the procedures of packing and transport were conducted with care. The painting sailed on the Grand Canal to Palazzo Mocenigo, after that six men, under the care of the Venetian art dealer and packer Antonio Zen, worked for several hours to “remove all the little nails and carefully roll the canvas over a cylinder approximately two feet in diameter.”³⁵⁵ Finally, before the departure, the painting was unrolled once again, since the officials of the Accademia wanted to check that nothing else was rolled up with it.

In general, we can observe that the transport factor can undoubtedly be one of the main causes of damage to paintings, as Peter Schade also remarked during our conversation at the National Gallery (see Appendix I). When necessary, in order to preserve the artworks under their care, restorers and curators are required to protect them by prohibiting their transport. An example of this policy is NG 3, *The Music Lesson*, possibly by Titian (c. 1580, Oil on canvas 100.4 x 126.1 cm): a report of 1949 concluded that, due to the bad condition of the painting, it was “quite unfit for exhibition or travel”.³⁵⁶ Despite the potential danger of transport, it is also true that there are cases in which the packaging and transport of the paintings become urgent and necessary for their safety and security. Shortly before the outbreak of the Second World War, the majority of The National Gallery’s collection was transported for safety to North Wales (fig. 49). Only a few paintings were not moved up to Wales, including (NG 1866) *Mars and Venus* by Palma Giovane,

³⁵⁴ Mainly thanks to a clever negotiation by Mündler, who agreed with Count Thun for the export licence. Otto Mündler (1811-1870) was a German dealer and art historian who served as the National Gallery's Travelling Agent in the 1850s. See *The Travel Diaries of Otto Mündler. 1855-1858*, Edited and indexed by Carol Togneri Dowd, (The Walpole Society, 1988). Leopold Graf von Thun und Hohenstein (1811 - 1888) was a leading Austrian statesman from the Thun und Hohenstein family. See Charles Herbermann, "Count Leo Thun-Hohenstein" in *Catholic Encyclopedia*, (New York: Robert Appleton Company, 1913).

³⁵⁵ N.Penny (2008), p. 374.

³⁵⁶ N. Penny (2008), p. 296.

which in fact enjoyed very little consideration.³⁵⁷ Obviously many museums took similar initiatives in the years of conflict. One example of transport to save a painting concerns Rembrandt's *The Night Watch*, rolled and unrolled in 1939 to be kept safe during the bombings of the Second World War.³⁵⁸ These photograph record the painting rolled around a cylinder and put inside a trunk (fig. 50). In 1945 the painting was unearthed from the bunker where it was kept and unrolled at the Rijksmuseum in Amsterdam (figs. 51 and 52). These are just a few examples to show how paintings have been rolled up across history, and how relatively simple it can be to find information about rolling in the published literature. As for the physical damage the procedure can provoke on paintings, it is described at length in the *National Gallery Technical Bulletin*, regarding Titian's *Bacchus and Ariadne*.

Titian, Bacchus and Ariadne (NG 35)

It was the focal point of Arthur Lucas and Joyce Plesters' article dated 1978.³⁵⁹ The authors' concentration on the damage of rolling procedure, makes this study extremely relevant to this research, since it contributed to opening the path for transport studies. It is very well known that this canvas by Titian suffered at least twice from a hasty rolling up, which had disastrous consequences for the painting. *Bacchus and Ariadne* is one of a cycle of paintings of mythological subjects commissioned by Alfonso I d'Este Duke of Ferrara (1476-1534) for his Camerino d'Alabastro, a private room in his palazzo in Ferrara. The iconographical programme was established by Mario Equicola (1470-1525), an intellectual active at the Mantua court of Isabella

³⁵⁷ For an interesting publication about the National Gallery collection see Susanna Avery-Quash (with Alan Crookham), *Upstairs, downstairs. The National Gallery's dual collections*, in *Museum Storage and Meaning: Tales from the Crypt*, edited by M. Brusius and K. Singh (London and New York, 2018).

³⁵⁸ Esther Van Dujin and Jan Piet Filedt Kok, *The Restoration of Rembrandt's Night Watch*, in *The Burlington Magazine*, Vol. CLVIII, n. 1355, February 2016.

³⁵⁹ A. Lucas, J. Plesters (1978), p. 38.

d'Este (Alfonso's sister).³⁶⁰ Titian began the picture in Venice in 1520 or 1522, after receiving from the Duke a finely woven, ready stretched canvas.³⁶¹ Alfonso's agent saw the painting, almost finished, in Titian's workshop in Venice during the summer of 1522. The unfinished canvas travelled by sea and then by land from Venice to the port of Ferrara, while Titian himself moved there in January 1523 to complete the work and maybe also to be present during its installation in the Camerino. Records exist of the payments made on 30 January, 1523 "to a *navicellaio* (boatman) for carriage of a picture from Venice to Ferrara, sent by Maestro Titiano to H. Illust. Highness. Also thanks to surviving documents, we know that in 1523 the painting was transported from Venice to Ferrara "by a single porter on his shoulders". And payments are recorded to a carter who carried from Francolino to Ferrara the *forziere* (chest) of 'Maestro Tutiano."³⁶² Therefore, the canvas must have been rolled for transport, and re-stretched on arrival. Later, in 1598, the picture was transferred from Ferrara to Rome. The picture's third major journey, to London, occurred in 1806 or 1807.³⁶³

It seems impossible to me that such large painting (176.5 x 191 cm with its stretcher) could have been transported kept on its frame and without being rolled-up, even imagining a very strong porter. In 1967-9 the painting was

³⁶⁰ The other paintings of the cycle are: Giovanni Bellini's *The Feast of the Gods*, 1514 (now in the National Gallery of Art, Washington, D.C); Titian's *The Worship of Venus*, 1518-19 (Museo Nacional del Prado, Madrid); Titian's *The Bacchanal of the Andrians*, 1529-1520 (Museo Nacional del Prado, Madrid). Unfortunately the room known as "Camerino d'Alabastro" was dismantled at the end of the sixteenth century, and its precise location within the palace is no longer known. In October 1519 Titian sent the almost complete *Offer to Venus* to Ferrara, and shortly afterwards he went to the palace to apply the finishing touches to it (and also to repair any transport damage). Alfonso was evidently struck by the result, because he later commissioned the painter to execute two other Bacchanals. Peter Humpfrey, *Titian: The Complete Paintings*, "The Classic Art Series", (Harry N. Abrams: New York, 2007), p. 72.

³⁶¹ The original canvas is remarkably thin and finely woven considering the relatively large size of the picture. The Duke probably wanted to be sure that the painting would perfectly fit in his Camerino d'Alabastro.

³⁶² Joseph Archer Crowe and Giovan Battista Cavalcaselle, *The Life and Times of Titian, with some account of his family* (John Murray: London 1881) edition of 1887, vol. I, p. 258. These payments refer to January 30, 1523. For a more detailed description of the events, see Crowe and Cavalcaselle p. 253-9; see also Campori's *Tiziano e gli Estensi*, p. 13-16. To sum up, Titian's journey to Ferrara was long awaited by the Duke, due to the painter's many commitments.

³⁶³ For this painting's subsequent journeys, as well as for the other works in this chapter, refer to the database.

cleaned and restored in the National Gallery Conservation Department. The restoration was also the occasion to analyse the work's physical condition. Taken after cleaning and before restoration in February 1969, the photo in fig. 55 shows the surface of the artwork in a disintegrating state; the damage is particularly evident in the sky.³⁶⁴ The National Gallery's conservators ascribed the damage to the rolling of the canvas. As we read in the article:

"This could have been the cause of the severe flaking that has affected part of the paint surface, since the pattern of the paint losses visible in photographs taken after cleaning but before restoration in 1967 can be seen to have a somewhat vertical alignment".³⁶⁵

The article is also relevant because it offers a description of the damage of the rolling up:

"It was not unusual in the past (and in Venice even today) to take a canvas painting off of its stretcher and roll it up for ease of transport whether on human-or horseback, by waggon or boat. This operation, particularly if the canvas is rolled with the paint layer innermost, can be very injurious to both paint and ground layers. It would be quite likely to cause *both vertical cracks and horizontal cleavage* in a rather brittle material like gesso (a form of calcium sulphate bound with animal glue, which was in fact identified as the ground of the Bacchus and Ariadne). The many small losses noted in the paint layers coupled with the disintegrating state of the gesso ground before its recent consolidation are not inconsistent with rolling of the painted canvas combined with rough handling in transit".³⁶⁶

Thanks to other details of these x-rays I gathered from the restoration dossier (figs. 57, 58), we can better see the damage mentioned in the article.³⁶⁷ It is

³⁶⁴ Before this restoration, investigations were also carried out in 1954 and 1962. The respective x-rays are shown in Figg. 53 and 54.

³⁶⁵ Arthur Lucas, Joyce Plesters, 'Titian's "Bacchus and Ariadne"', *National Gallery Technical Bulletin* vol. II, (1978), p. 27.

³⁶⁶ Technical Bulletin vol. II p. 27.

³⁶⁷ X-ray mosaic dated 28 May 1962; and x-ray mosaic dated 24 January 1975.

probable that the painting was already rolled up at Titian's time, to be placed in a trunk and transported by boat, then on the shoulders of a porter, and finally on a cart. However, it is also very likely that the cracking that we observe on the painting's surface was caused by rolling the canvas during the artwork's later trips, as is also mentioned in the Technical Bulletin article (it was perhaps rolled again in 1598, when it was taken to Rome by Cardinal Pietro Aldobrandini). It is, in fact, very difficult to conceive, especially for such a prestigious commission, that if the transport to Ferrara had affected the painting, Titian would have continued to work on a damaged painting.

Indeed, according to Jill Dunkerton:

"in 1523 Titian didn't have to repair any damage, because the damage only happened when the painting was rolled when it was old already (50 or 60 years after the execution) and it was transported to Rome, so the damage we see now is not necessarily related to the original transport, and I think is important for you to discuss this point because, quite often, the damage is for subsequent transport. Which kind of damage do you think Titian had to deal with? I do not think he necessarily went to deal with damage, I think he went to finish the painting, to harmonise it *in situ* (like the addition of the dog). So when we see these cracks on paintings...the cracks in the sky of Bacchus and Ariadne are not in the rest of it, and it is an hypothesis that they have to do with transport but we are not sure, but for sure it wasn't the initial transport and there is no evidence that he had to repaint the sky, so I think the initial transport went fine. It is lovely to think that Bacchus and Ariadne was transported by a strong *facchino* on his shoulders."³⁶⁸

The attention and care that Titian reserved for his painting can also be attested to the painting ground that he used before applying his paint. Indeed, technical analyses conducted on Titian's *Bacchus and Ariadnae* in 1978 demonstrated that the painting ground spread on this canvas was a very thin layer of gesso, so thin that it barely covered the canvas grain.³⁶⁹As stated by

³⁶⁸ This is an extract of the conversation that I had with Jill Dunkerton in London, in July 2018.

³⁶⁹ A. Lucas, J. Plesters (1978), p. 38.

Arthur Lucas and Joyce Plesters in 1978, its thinness is perhaps fortunate from the point of view of conservation, for a thicker layer might have cracked and disintegrated even more disastrously, particularly if, in the past, the canvas had been rolled for easier transport.

Traditional gesso grounds, commonly used in Early Italian wood panel paintings, were still used in Venice by painters working on canvas. A reference to the use of gesso occurs in the *Modo da Tener nel Dipingere* by Giovanni Battista Volpato, dating from the late sixteenth or early seventeenth century and deriving from the practice in the Bassanos' workshop. The topic has already been addressed in Chapter II. I just recall here that, in Volpato's manuscript, one apprentice remarks that old pictures on canvas are better preserved if the gesso ground is very thin, as indeed it is in the *Bacchus and Ariadne*. The final question, therefore, is: since the painting was intended to be shipped to Ferrara, could this thin layer of gesso have been a conscious choice on Titian's part, in order to make his canvas more flexible to be rolled up? In my opinion, the answer to this question is yes.

Titian, Portrait of a Lady known as La Schiavona (NG 5385)

The painting, portrait of an unknown woman probably from Dalmatia, can be dated back to 1510-12, when Titian was in his twenties. We do not know much about the story of this painting, and what we know about its transport comes from observing the technical evidence. The National Gallery Technical Bulletin tells us:

“the x-ray shows the location of retouched losses of paint and ground along fine roughly horizontal creases that were probably caused by the rolling of the canvas for transport in the past.”³⁷⁰

³⁷⁰ Jill Dunkerton, 'Recovering Titian: The Cleaning and Restoration of Three Overlooked Canvas Paintings', National Gallery Technical Bulletin Vol. XXXIV (2013), p. 56.

In the x-ray we can see very serious damage, that is maybe due to later transport (figs. 59 - 61)³⁷¹. Even in this case, in fact, it seems very unlikely that such consistent damage occurred when the pictorial material was still relatively fresh and elastic. The signs of damage in this painting are very similar to those visible in the canvas of *Bacchus and Ariadne*, only their direction is different. This could mean that while the *Bacchus and Ariadne* was rolled around its vertical axis, the painting known as *La Schiavona* was rolled around its horizontal axis. In the case of this painting, the typical signs of rolling up are much more evident in the upper part of the canvas: the rolling procedure started probably from the top, which is, therefore, more damaged and crushed. In general one is tempted to wonder whether it is possible, simply by observing the direction of the cracks on a painting, to deduce the side and the direction of the rolling. It would seem logical to think that the paintings were rolled up according to a criterion, and not randomly. For example, a painting rolled along its short side will result in a smaller and more conveniently portable roll.

The dimensions of this painting do not make it a large-format canvas (119.4 x 96.5 cm)³⁷², and this helps demonstrate that even smaller paintings were commonly rolled up.

Giuseppe Salviati, Justice (NG 3942)

Giuseppe Salviati's *Justice* is an oil on canvas dating to 1559 and measuring 90.2 x 125.1 cm. The original destination of this painting was probably an overdoor (or an arch). According to the catalogue published in 2008, the painting presents damage that can be attributed to a rough rolling procedure: "there are numerous vertical cracks in the paint surface, perhaps caused by rolling of the canvas."³⁷³ I show a detail of the infrared of July 31, 1959 (figs. 62 and 63), where we can perhaps observe some traces of this damage. However, the photographic material made available in the painting's

³⁷¹ Composite x-ray before cleaning of December 3, 1959.

³⁷² Please refer to the database at the end of this chapter for more detailed information about the painting's date, composition of support, ground and priming, original destination, and history from the point of view of transport and handling.

³⁷³ N. Penny (2008), p. 110.

conservation dossier is not entirely sufficient to document what was set forth in the catalogue.

After Titian, The Trinity (NG 4222)

The painting after Titian known as *The Trinity (La Gloria)* is a copy from the master's large canvas known as "La Gloria" (preserved in the Museo Nacional del Prado). It is an oil on canvas that dates to the late seventeenth century, and measures 131.6 x 100 cm. Its support is a tabby-weave canvas of a medium weight, that has been pasted on to a finer tabby-weave canvas, with no significant reductions, and the painting ground is brown and reddish. In the catalogue we read that "the surface is badly cracked, perhaps on account of the canvas having been rolled up, as is said to have happened in the early nineteenth century. There are numerous areas of flaking, especially at the edges of the painting."³⁷⁴ Before its arrival in the National Gallery in 1926, this painting had a very peculiar history, which also involved - at some point - a Madrid tavern and its customers (information gathered in the database). The x-ray image, produced in June 1963 and visible in Nicolas Penny's catalogue³⁷⁵, shows the painting seriously damaged, especially near the edges (fig. 64). However, the surface damage described in the catalogue as due to the rolling up looks, in my opinion, more like a surface *craquelure* of the pictorial film (figs. 66 and 67). Some traces are perhaps more ascribable to other accidental events that happened to the painting, rather than to a rough rolling procedure (fig. 65, all are details from an x-ray by Alan B. dated September 1927).

Paolo Fiammingo, Landscapes (NG 5466 and NG 5467)

I also mention Paolo Fiammingo's landscapes representing respectively a *Scene of Enchantment* and the *Expulsion of the Harpies*; executed in oil on canvas and dating to around 1590, they measure respectively 185 x 206.5 cm and 185 x 206 cm. In the catalogue we read that they are known to have

³⁷⁴ N. Penny (2008), p. 304.

³⁷⁵ N. Penny (2008), p. 307.

been rolled up before being bought in Venice in 1892, then relined and restored in London.³⁷⁶ Despite having been rolled-up, the catalogue does not mention any damage occurring in transportation, but only some “losses along the canvas seam”; it also states that the two landscapes were executed very hastily by the painter. I have already mentioned a similar case of “exceptionally hasty execution” concerning Paolo Fiammingo in Chapter III.³⁷⁷ I would like to finish with two paintings by Lorenzo Lotto which show signs left by packing procedures. They belong to the National Gallery’s collection, but have been presented and discussed in another catalogue.³⁷⁸ I include them because Lorenzo Lotto is a Venetian-trained painter, and also because, in both cases, transport damage is not mentioned in the catalogue, but is suggested by my observation of the x-rays.

Lorenzo Lotto, Portrait of a Woman Inspired by Lucretia (NG 4256)

Regarding NG 4256, the catalogue does not mention transport damage³⁷⁹. However, the x-ray mosaic³⁸⁰ presents cracks that, in my opinion, as noted above could suggest damage partly caused by rolling-up. I present photos contained in the conservation dossier: an x-ray dated September 12th, 1997, and the detail of an x-ray dated August 19th, 1983 (Figs. 68 - 70). The damage I refer to can be observed towards the left edge of the painting and in the area of the right hand of the woman. Similar paint losses - more severe damage than simple cracks - are also visible in *Bacchus and Ariadne* (NG 35, fig. 57).

³⁷⁶ N. Penny (2008), p. 83.

³⁷⁷ See Chapter III, p. 113.

³⁷⁸ Nicholas Penny, *The Sixteenth-Century Italian Paintings. Volume I: Paintings from Bergamo, Brescia and Cremona*, National Gallery Catalogues (National Gallery Company: 2004).

³⁷⁹ N. Penny (2004), p. 74.

³⁸⁰ N. Penny (2004), p. 76.

IV.2 Damage caused by Packing:

National Gallery's paintings presenting damage from folding

Lorenzo Lotto, The Virgin and Child with Saint Jerome and Nicholas of Tolentino (NG 2281)

In this case, also, the catalogue does not report any transport damage, but the x-ray of the painting³⁸¹ leads me to think of damage caused by folding. I chose the photo taken after cleaning and before restoration from the conservation dossier (figs. 71, 72).³⁸² Here it would seem that damage may have been caused by folding, my next topic. While the rolling-up procedure is directly related to the needs of easy handling and transport, the observation of damage by folding requires us to distinguish between accidental folds and those made during a deliberate packaging operation. Below, I report all the cases in which folding damage can be seen and, where possible, I make the necessary distinctions.

Jacopo Tintoretto, The Origin of the Milky Way (NG 1313)

It is well known that *The Origin of the Milky Way* is a mythological allegory sent to the Holy Roman Emperor, as some sort of gift, around 1575.³⁸³ I have already considered this work in my section devoted to canvas supports (Chapter II), as the canvas' structure of this painting is particularly complex. The work is also taken into account in this chapter as it presents, apparently,

³⁸¹ N.Penny (2004), p. 70.

³⁸² Dated May 2nd, 1979.

³⁸³ The painting was probably in the collections of the Holy Roman Emperor Rudolf II and the Marquis of Seignelay. In the collection of the Duke d'Orléans, Regent of France, by 1724. Lot. 238 at the sale of the Italian portion of the Orleans Collection at the Lyceum, London, on 26 December 1798, where bought by Bryan. Sold, probably by Bryan, to the Earl of Darnley, in whose family collection it is recorded in June 1831. Purchased from the Earl of Darnley in 1890. N.Penny (2008), p. 162. Even the famous *Four Allegories of Love* by Veronese probably belonged to the Holy Roman Emperor Rudolf II, since the four paintings are present in the inventory of 1637 (in particular they appear among the paintings bought in Prague for the Swedish Crown in 1648, and then they became part of the collection of the queen of Sweden). This leads us to deduce that the four paintings, probably not executed with the intention of being exported, traveled across the Alps. N.Penny (2008), p. 419.

the signs of a rough fold. In fact, the horizontal seam at the bottom (which divides fragment A from fragment B) was previously interpreted as folding damage, consequently leading to a different interpretation of the canvas' structure. Most likely the painting really was folded along this seam, but the evidence we notice is certainly (and above all) also coinciding with a structural joint. This case study is a good example of how difficult it is sometimes to distinguish between the canvas' seams and potential folding damage. It is interesting to note that the painting does not present any gesso ground, and only has a dark brown priming layer.

In the catalogue we can see the x-ray of the painting³⁸⁴, but I also show here details of the infrared image that I selected from the conservation dossier (figs. 73 and 74).³⁸⁵

Jacopo Tintoretto, Christ Washing the Feet of the Disciples (NG 1130)

This painting is an oil on canvas measuring 204.5 x 410.2 cm, and can be dated to 1575-1580. It was conceived as a companion piece to the Last Supper (still in the Church of San Trovaso, Venice), but originally the position of the two paintings was inverted. The original canvas, covered with a gesso ground and a thick black priming layer, is a complex structure, as I have already discussed in my chapter II.³⁸⁶

Regarding the damage by folding, we read in the catalogue: "in addition to the losses along the main horizontal seam there is a line of other losses slightly lower down, perhaps corresponding to a fold in the canvas." It is possible to see the mentioned fold in the black and white photograph of the painting hanging in the gallery (fig. 75), as well as in the detail of an infrared image (fig. 76). There is also an interesting fact regarding the painting's large size: when it was bought at auction by the National Gallery in 1882, it was one of the cheapest purchases, certainly due, in part, to its large and

³⁸⁴ N.Penny (2008), p. 157.

³⁸⁵ Infrared photograph of October 10th, 1956.

³⁸⁶ And in N.Penny (2008), p. 164.

inconvenient format; later it even became difficult to decide where to hang the piece inside the gallery.³⁸⁷

Follower of Jacopo Bassano, The Adoration of the Shepherds (NG 1858)

The next painting presenting damage of rough folding is *The Adoration of the Shepherds*, painted by a follower of Jacopo Bassano. The oil on canvas dates back to 1600-1625, and it measures 65.4 x 91.8 cm. In the catalogue we read: “there are two distinct horizontal lines in the surface, one about 11 cm from the lower edge and the other 19 cm from the upper edge: these suggest that the painting was, at one time, folded”. However the authors do not suggest when the damage may have occurred. In the photograph shown in the catalogue these traces of folding are not easily discerned.³⁸⁸ Luckily, the conservation dossier contains an infrared image where we can observe these signs quite well (Figs. 77 and 78).³⁸⁹ Unfortunately, there are no more detailed photos, but it would be interesting to understand precisely whether the fold was made towards the outside, as is much more likely to have happened, towards the inside. It is much more probable and logical, I believe, that a painting that had to be transported was folded inwards, in order to keep the painted surface more protected.

IV.3 Damage caused by Packing: Holes from Nails removed for Transport

Titian, The Holy Family with a Shepherd (NG 4)

³⁸⁷ “NG 1130 was acquired at the sale of the Hamilton Palace Collection at Christie’s on 24 June 1882, where it was lot 353. The Gallery seems to have instructed ‘Blood’ to act and the picture was marked down to him at the low price of 150 guineas (that is, £157 10s). It was the cheapest of the dozen paintings acquired by the Gallery on that occasion, no doubt partly on account of its inconvenient size.” N. Penny (2008), p. 173.

³⁸⁸ N.Penny (2008), p. 32.

³⁸⁹ I was unable to decipher the date on the back of this photograph.

Painted around 1510, this oil on canvas measures 99.1 x 139.1 cm³⁹⁰. I present a detail of the x ray composite³⁹¹ where we can observe traces that Ashok Roy describes as holes from nails removed for transport (Fig. 79). The nails fixing the canvas to the frame were removed in order to detach the painting from its stretcher and allow the rolling-up procedure. The holes are, therefore, connected to a packing practice.

IV.4 Damage incurred in Transit: National Gallery paintings presenting damage that occurred during handling and transportation

In this section I will present the paintings that, according to the National Gallery's catalogue, show signs of accidental damage incurred during transport.

Workshop of Titian, Venus and Adonis (NG 34)

The oil on canvas representing *Venus and Adonis* and attributed to the workshop of Titian dates to c. 1554 and measures 177.9 x 188.9 cm. The painting presents accidental damage. In fact, in the National Gallery catalogue entry we read: "when the painting was transported to Bangor in August 1939, at the outbreak of the Second World War, an accidental gash was made in the paint on Adonis' foot. Between 1939 and March 1940 this damage was patched from behind, filled and retouched."³⁹² The photographic material in the painting dossier dates back to 1956 and 1973, after the restoration works, so there is no visual information regarding the damage that occurred in 1939.³⁹³

There are many versions of the painting. One of them, preserved in the Prado, is an interesting case study: "the version in the Prado, Madrid, is

³⁹⁰ Ashok Roy, 'Titian's Painting Technique before 1540', National Gallery Technical Bulletin Vol. XXXIV, 2013, p. 46. The measures with the stretcher are: 106.4 x 143 cm, as written in my database.

³⁹¹ Dated October 23rd, 1986.

³⁹² N.Penny (2008), p. 274.

³⁹³ What we have is an infrared photograph of the painting made on July 17th, 1956, also published in the National Gallery's catalogue. N.Penny (2008), p.277.

reasonably supposed to be the painting of Venus and Adonis, which, Titian wrote, he had sent to Philip in London³⁹⁴. Philip complained that the picture was perfect except for a fold made in packing. It seems likely that he was disturbed by (and did not understand) what must, in fact, have been the line of the canvas joint, which is now indeed very evident". Here are King Philip's words: "El quadro de Adonis que acabó Ticiano ha llegado aquí, y me paresce de la perfición que dezís, aunque vino maltratado de un doblez que traya al traves por medio dél, el qual se desvió hazer al cogelle; verse ha el remedio que tiene".³⁹⁵ Once again, thanks to this document, we see a mistake in distinguishing the folds made during packing operations, from the folds coinciding with the joints of the canvas. This uncertainty, as we have seen, also occurs in the case of Tintoretto's *The Origin of the Milky Way* (NG 1313).

Venetian painter, Portrait of a Bearded Cardinal (NG 2147)

The oil on canvas attributed to a Venetian author and representing the *Portrait of a Bearded Cardinal*, can be dated to 1580 (maybe later) and measures 68.4 x 53.9 cm. Although the visible damage in the x-ray might be ascribable to a very rough folding, I decided not to include this case study in my previous section about "damage of folding": indeed the fold that damaged the canvas appears to more likely be the result of an accident, and certainly not due to a careful packing procedure. This is mainly deduced from the irregular position and shape of the fold. In the catalogue we read: "on the right side of the canvas, passing just to the right of the sitter's eye, there is a large vertical line of loss which is connected to one that is smaller and more or less horizontal. The character of this loss is consistent with careless folding of the canvas, causing the brittle gesso and paint layers to break. The survival of small islands of paint within the areas of loss suggests that the canvas itself was not torn".³⁹⁶

³⁹⁴ Philip was prince of Spain but he had recently been made King of England by marriage with Queen Mary.

³⁹⁵ N.Penny (2008), p. 280.

³⁹⁶ N.Penny (2008), p. 328.

The x-ray images collected in the conservation dossier date to February-March 1982; they are two but very similar. One of these photographs is published in the catalogue³⁹⁷ but I think it is useful to show an enlarged detail (fig. 80). It is also possible to notice another fold, running horizontally, in the lower right corner (fig. 81), and another smaller fold (fig. 82) that helps us discard the hypothesis of damage occurring during packaging. I also show an infrared image of February 1982 in which the damage of bending is visible (fig. 83 and 84). Given the irregular nature of the three folds, it seems to me more likely that the painting was accidentally crumpled up at some point. The preparation of the canvas consists of a double ground of thin gesso, which is covered with a dark ground of black charcoal and brown earth: these layers have cracked and detached seemingly during careless handling.

IV.5 Unclear Damage: National Gallery paintings presenting unclear kinds of damage related to packing and transport procedures

Lambert Sustris, The Queen of Sheba before King Salomon (NG 3107)

This oil on canvas dates approximately to 1540-55 and measures 80 x 187.3 cm. As is also documented in my database, this painting is executed on a loose and coarse tabby weave canvas, and has an unusual ground composed of chalk (calcium carbonate), quite uncommon in Italian paintings except for rare examples (including Veronese's *Adoration of the Kings*). In addition, another unusual feature is the presence of two priming layers (the first one is pinkish, the second one is pale grey) on top of the chalk ground. From the point of view of damage incurred in transportation, it is an interesting case study, since "numerous long, vertical but meandering and branched tears (or perhaps cracks from rolling or folding) can be discerned, chiefly to the right of centre".³⁹⁸ Analysing the conservation dossier of this painting, I found no significant material, but only two black and white photographs, but with nothing written on their *verso*. With only this material available, not much else can be said about transport damage, and a more in-

³⁹⁷ N.Penny (2008), p. 329.

³⁹⁸ N.Penny (2008), p. 126.

depth study would be beneficial. As we have seen in the previous examples, in fact, the kinds of damage caused by rolling and by folding are very different from each other and are quite recognizable. The description given in the catalogue makes me think more of damage that occurred during a rolling-up procedure.

Jacopo Tintoretto, Saint George and the Dragon (NG 16)

Jacopo Tintoretto's *Saint George and the Dragon* is an oil on canvas measuring 158.3 x 100.5 cm, and dating to c. 1555. As will be recorded in the database, the painting has been transported many times throughout its history. In 1940 "slight damage to the surface caused in transport to storage in North Wales at the beginning of the Second World War received attention and cleaning tests were carried out".³⁹⁹ It is not specified what kind of damage the painting suffered on that occasion, but it is described as minor damage, probably fixed during restoration ("received attention"). In the National Gallery's catalogue and Technical Bulletin we can find published x-ray and infrared photographs of this painting, but there are no visible traces of damage clearly associated with transport.

Paris Bordone⁴⁰⁰, A Pair of Lovers (NG 637)

This oil on canvas measures 139.1 x 122 cm, and dates to 1555-1560. In the catalogue we read that, apart from a tear in the canvas (sewn up) and a large loss (maybe a hole) in the man's left thigh, "some of the damage in the top left hand portion of the painting occurred when it was in transit to Bangor in August 1939, at the outset of the Second World War".⁴⁰¹ In order to better understand what could have happened during transport, I have inspected the conservation dossier which, however, contains black and white photos dating

³⁹⁹ N.Penny (2008), p.142.

⁴⁰⁰ Regarding Paris Bordone, native of Treviso, we know that his paintings (especially the works with an erotic subject) were very often sent abroad, from Venice but also from Paris and Augsburg, because Bordone himself was an itinerant artist. Instead he rarely executed works for Venice, perhaps because his work wasn't well received among Venetian clients. N. Penny (2008), p. 43.

⁴⁰¹ N.Penny (2008), p. 56.

to before the restoration of 1985 (figs. 85-87). So we cannot find clear evidence of the damage referred to, unless it consists of the paint losses visible in fig. 28 (however, these traces are present on all sides of the painting. In fig. 85 we see a rather important instance of damage, which looks like a tear in the canvas crossing the man's chest. A peculiarity of this painting is that, unusually for a Venetian painting of the first half of the sixteenth century, it has no preparation ground.

Titian, The Death of Actaeon (NG 6420)

Titian's *The Death of Actaeon* is painted in oil on a canvas support measuring 178.8 x 197.8 cm, and is dated 1559-1575. The catalogue reads "the losses form lines which are slightly suggestive of creases caused by folding or rolling".⁴⁰² These lines can be seen in the x-ray photograph of the painting (figs. 88 and 89).⁴⁰³ The catalogue also informs us that a vertical seam can be easily discerned at the centre of the canvas; in the conservation dossier I found a raking light photograph of which I offer a detail, useful for observing the seam that protrudes from the plane of the canvas (fig. 90). In light of these images, I notice the presence of vertical lines of damage only on the side of the central seam. In any case, these lines do not seem to me to be damage caused by folding, which is usually characterized by neater lines. It could be explained as the effect of a rough rolling-up that caused the thin gesso ground (and the dark *imprimitura*) of the painting to crack. Once again, in the catalogue, we can notice how fuzzy the distinction between rolling damage and folding damage can be.

Paolo Veronese, The Adoration of the Kings (NG 268)

Veronese's large-scale oil on canvas representing *The Adoration of the Kings* dates to 1573 and measures 355.6 x 320 cm. In this painting, as in *The Death of Actaeon* (NG 6420), it is possible to see with the naked eye the

⁴⁰² N.Penny (2008), p. 248.

⁴⁰³ Fig. 88 is a detail of the photograph published in N.Penny (2008), p. 251; fig. 89 is a much more contrasted image and can be found in the painting's conservation dossier.

structure of the canvas support (in particular the seams), which in this case is composed of three horizontally joined pieces, each the standard width of just over a metre.⁴⁰⁴ I personally took a photograph from below to highlight the protruding seams (fig. 91). Moreover, the preparatory layer of this painting is very unusual: it consists of “white ground composed of calcium carbonate bound in glue, rather than the calcium sulphate (gesso) that is usual in Italian paintings. It is very unusual, perhaps the only reported example in an Italian painting of the sixteenth century. There is no priming on this ground”.⁴⁰⁵ Regarding eventual damage caused by handling and transport, the catalogue reads: “there are many losses along both sides of the canvas which are consistent with scuffing that would have occurred when the canvas was rolled or folded for storage. The surface is very abraded in many areas”. Again in this case there is uncertainty in distinguishing between damage caused by rolling or folding. The catalogue and the *Technical Bulletin* do not publish x-ray photographs, nor are there any in the conservation dossier. We know that the painting was kept in a room near the parish church of San Silvestro in the sestiere of San Polo, after being removed in 1837 from its original position in the church's nave. Probably on that occasion the painting was detached from its frame, and then rolled-up or folded. This is not said on the basis of observation, but simply hypothesized, given that the painting is of large format and would have been inconvenient to store in another way. Also in 1855 the painting was moved to London. Eastlake writes that it was “folded twice horizontally”, but he probably confused the seams I highlight in the photograph for two folds (but it is not inconceivable that the painting was folded using the two seams as guides). Furthermore, it is not clear whether Eastlake means the transport in storage in 1837 or the transport to London in 1855.⁴⁰⁶ In the catalogue there is also a note about the frame: since the painting was folded (or rolled) in Venice, this explains why it arrived in London without its frame.⁴⁰⁷

⁴⁰⁴ N.Penny (2008), p.396.

⁴⁰⁵ N.Penny (2008), p. 396.

⁴⁰⁶ N.Penny (2008), p. 396.

⁴⁰⁷ N.Penny (2008), p. 406.

Jacopo Tintoretto, Portrait of Vincenzo Morosini (NG 4004)

This oil on canvas was painted around 1575-1580 and it measures 85.3 x 52.2 cm. The painting presents a “large horizontal tear in the canvas across the man’s chest (cause not explained)”.⁴⁰⁸ It is therefore not known whether the damage described is due to packing and transport procedures. In any case, in the conservation dossier of the painting there is an x-ray photograph (fig. 92)⁴⁰⁹, more contrasted and clear than the one of identical subject published in the catalogue⁴¹⁰, as in the case of NG 6420. As we can observe in the photo, in the lower right corner of the painting there is what could be the damage mentioned above. It looks to me like a cut in the canvas support (which is of a medium/fine tabby weave), then re-fixed to the frame with a nail and a paper clip, both visible in the x-ray. The damage is accompanied, in the lower right corner, by other smaller cuts. Also in this case the edges of the canvas seem to have been re-fixed to the support. I do not believe that these traces are due to a packing procedure, they are probably the result of an accident.

Conclusions

Starting from the study of the catalogue of the Venetian Renaissance paintings published in 2008 and combined with the catalogue of Titian's paintings, published in the *Technical Bulletin*, this chapter has highlighted different types of transport damage in the National Gallery's collection, including paintings where the kind of damage is not clearly distinguishable. In most cases⁴¹¹ I have inspected the conservation dossier of a painting when the sources pointed to damage occurring during transport. The investigation could be deepened and extended also to all the paintings of the collection that have not yet been examined in depth, or that apparently do not present damage of transport. In the light of the data I collected, it is possible to state

⁴⁰⁸ N.Penny (2008), p. 176.

⁴⁰⁹ X-ray dated November 11th, 1978.

⁴¹⁰ N.Penny (2008), p. 179.

⁴¹¹ An exception are the two paintings by Lorenzo Lotto, about which the catalogue does not mention transport damage.

that in the majority of cases, the damage is the consequence of incorrect packing procedure. A rough packing operation, whether it is rolling or folding, can be extremely dangerous for the painting and, unlike a possible accident that may occur in transit, packing damage is the result of intentional action.

General conclusions

I will now summarise the main arguments of this dissertation, and will try to bring together the broad range of material discussed into some more general reflections. The three main research questions of this project presented in the introduction have been answered throughout the thesis.

The first research question was: how were large-scale paintings handled and shipped in Renaissance Venice? In order to answer to this question, I analysed the historical context first, and the results of my investigation are presented in Chapter I, where one can find an overview of the numerous Venetian guilds involved in operations of packing and transport of any kind of goods during the Renaissance. This analysis enables us to realise how many people and professions were involved in these practical procedures. In the lagoon city various corporations of packers like *Ligadori de Comun*, and *Ligadori del Fontego dei Tedeschi* operated, while professional porters such as *bastazi* and *facchini*, involved in the transport of various types of goods, worked across the city and beyond. In this chapter, I also took into consideration the packing procedures, and for this reason I brought together data about the various corporations of producers of materials that were used in packing procedures like *casseleri*, *filacanevi*, *fustagneri* and *coltreri*, *stringheri*, etc. I highlighted relevant transport procedures, for example, such as how many goods were preferably transported by single porters on their shoulders, rather than by boat even in Venice. More generally, the first chapter sheds light on how difficult it can be to exactly understand how packing and transport operations in Renaissance Venice really worked. Despite the variety of corporations that animated Venice, many transport activities were carried out irregularly and were affected by the competition between the various corporations. Obviously, for this reason these activities are impossible to track down in historical records, and the lack of documentation creates serious limitations to further analysis. Moreover, in the numerous *statutes* that I inspected, I found no information specifically related to the transport of paintings.

This is why, in order to give a more satisfying answer to the first research question, I decided to devote Chapter III to a collection of documents specifically related to the transport of paintings by various

Renaissance artists in various conditions and times. This chapter discusses the most commonly used materials to pack Renaissance paintings and this had not been done before in print. Here, the reader will learn about Lorenzo Lotto's efforts in the "portadura" of his paintings and his use of ropes, nails, wooden panels and pieces of fabrics. One also discovers the existence of a metal tube requested in 1579 by Teodoro Sangiorgio, the man responsible for the artistic project at the court of Mantua, used to transport two rolled-up portraits on canvas with the required care. Cotton, carpets and waxed cloths, on the other hand, were used by Venetian workers to wrap Albrecht Dürer's *The Feast of the Rose Garlands* in 1606, for transport from Venice to Prague by foot. In this case, we can observe that the need for cheap and convenient transport seems not to have been a priority. I also took in consideration an earlier Florentine case-study, where a case of boiled leather was produced to protect two wooden panels commissioned in 1383 by Francesco di Marco Datini.

Together with packing material, in Chapter III I focus on the various modes of transport chosen specifically by Venetian painters. We return to Lorenzo Lotto and learn that he used to load his artworks together with other goods of any type very often, in order to ship his paintings by the cheapest and most convenient way. The third chapter also illustrates the diverse fate of similar paintings packed and transported in different ways. This is the case of Tintoretto's Gonzaga Cycle, shipped on two occasions - by wagon and by boat - from Venice to Mantua in 1580. Archival documents, in combination with conservation reports, help us to understand that transport by boat was the safer and easier option for the canvases of the cycle, and this method was suggested by the patron and not by Tintoretto himself.

In general, in the third chapter we notice the diverse behaviour of painters and patrons towards transport procedures. As I observed earlier, in some cases the conservation awareness of the painter was not highly developed, and the patron was sometimes more careful about the safety of the artwork. We can also say that it is quite difficult to detect stable patterns in historic shipment arrangements, and that packing and transport solutions were often adopted ad hoc. Apparently, the size of the painting did not really matter when a canvas needed to be prepared for transport: even small

canvases, that could have easily been transported stretched with their frames, were frequently rolled up.

The second research question was: how important is transport in the production process of paintings? To answer this, in my second chapter I question whether, and to what extent, the painters' choices were in some way influenced by handling and shipping issues. The answer is that, in the majority of the cases, transport and packaging was a key consideration in conceiving a large-scale painting. Chapter II makes very clear that, already during the design and production stages of an artwork, Venetian Renaissance painters paid attention to practical aspects such as easy handling and safe transport. They often chose to paint on canvas in order to facilitate packaging and transport procedures, and Andrea Mantegna's words about this technical choice are enlightening. After choosing the painting support, painters were looking for the lighter and more flexible preparation ground to be applied on canvases destined for export. Among the various recipes circulating in treatises of the time, the one recommended by Giovanni Battista Volpato and used by Tiziano Vecellio throughout his career (a thin layer of plaster spread on the canvas' fibres with a knife) was the most used and allowed an easier rolling up. On the contrary there is no evidence in the painting practice of the use of Vasari's transport-proof recipe based on flour glue. The second chapter, entirely dedicated to the production process of large-scale paintings, also takes into consideration the construction of wide canvases (*teleri*) for painting practice. Thanks to archival documents we can assume that, sometimes, painters illegally prepared the canvases within their workshops, cutting and sewing them illegally.

My third research question investigated whether paintings show any evidence of damage caused by transport. My fourth chapter therefore focussed on an examination of the physical condition of a specific collection of Renaissance paintings (a group of paintings in The National Gallery of London), and the potential damage caused by transport procedures. Following my investigations of the painting dossiers, and after many conversations with members of the Conservation Department at The National Gallery, I was able to distinguish what I believe to be five different types of "transport damage" in the National Gallery's group of Venetian Renaissance paintings:

- packing damage from rolling-up;
- packing damage from folding;
- packing damage from nails;
- damage occurring in transit;
- unclear damage relating to transport and packing procedures.

As can be observed in the database containing all the information I gathered about the group of paintings (Appendix II), in the majority of cases the physical damage was the consequence of an incorrect packing procedure. Therefore an incorrect packing operation, whether it is rolling or folding, can be extremely dangerous for the painting. It is also quite relevant to note that, unlike a possible accident that may occur in transit, packing damage is always the result of an intentional and conscious procedure. I would suggest that future research considers the “packing damage” to be as dangerous as the “transport damage” that is more frequently mentioned in the few studies on the topic.

I believe that my findings can contribute much to studies of the transport of Renaissance Venetian paintings. There is no doubt that interpreting all the above-listed aspects as a coherent whole is of the utmost importance: my aim was to create a possible context for further studies on this artistic and historical activity, while opening paths of investigation worthy of future research.

Appendix I - Conversations with Restorers

When dealing with issues such as production and transport of paintings, in addition to archival and bibliographic research, we have an important source of information in the professionals who, every day, study and handle paintings in all their materiality. Restorers are often those who have a more direct experience with the paintings' material components. During the conversations that I present here below, more than once I was told that it is not very common for a restorer to receive many questions from thesis candidates who does not work exclusively on restoration. Thanks to the nature of this project, direct dialogue with contemporary experts became an important source for my research. As for the topics of conversations, I adapted my questions to the professional figure I was interviewing. Often I asked about preparation grounds, but we also discussed the different types of canvas, the possibility to determine, by observing the damage, whether a painting on canvas had been rolled-up, the role played by the frame during transport, etc...Although some passages of the interviews go beyond the topic of "transport of paintings" (e.g. the explanation of different types of gypsum that I received at the Opificio delle Pietre Dure), they remain relevant, I believe, to a better understanding of some transport related topics.

Once I had gathered the transcriptions of my interviews all together, an issue I had to face was how to include them in the structure of my thesis. Initially I thought to divide them, and to distribute them in the various chapters according to thematic criteria. But this would have dismembered the conversations, depriving them of their cohesion. My work would no longer effectively give the idea of a plurality of individual experts having a conversation on the same themes, each with his own personal opinion resulting from his own study and of his own experience on paintings. Breaking up the interviews would also have made it more demanding and complicated to add the contributions of any new conversations to my work. Therefore, after reflecting, I decided to devote a proper section to the interviews, and to present them, one by one, in their entirety. I summarised and organised each one by theme, in order to be able to read and understand them in a simple and more immediate way. The advantages of this presentation were clear: in terms of methodology, it solved the practical

problem of being able to continue interviewing new experts without having to over-modify the structure of chapters and paragraphs, to integrate the various sections of the work, which will be easier to continue and enrich in the future. Furthermore, if each conversation is presented in its entirety, the voice of each expert retains its integrity and is not decontextualised. The result is a chapter that stands on meetings, exchange of opinions, mutual enrichment, shared experiences and even reflections on topics that are still only partially investigated by art historians.

To conclude this introduction, I would like to thank again all the specialists who accepted to meet me and be interviewed. Also, I would like to thank in advance all the specialists who, in the future, will accept to have a conversation with me about the transport of paintings.

I would like to thank my supervisor at the National Gallery, Matthias Wivel, for facilitating the meetings with Peter Schade and Jill Dunkerton. I would also like to thank Melissa Conn (Save Venice Inc.) for suggesting me to meet the restorer Egidio Arlango, and for arranging our meeting at the Gallerie dell'Accademia in Venice. Finally, I would like to thank Lorenzo Pericolo for suggesting me to meet Cecilia Frosinini in Florence.

**Conversation with Egidio Arlango⁴¹²,
Venetian Head Restorer at “Arlango Restauro e Conservazione Beni
Culturali”
Venice, February 21st, 2018**

Observations about the best preparation ground to be used for transport

After considering Giorgio Vasari's and Giovan Battista Volpato's formulas for the *imprimitura*, I decided to investigate which one would be considered, by restorers nowadays, the best preparation ground for safer packing and transport. Since the literature about this topic is poor and scattered, I resolved

⁴¹² Since the original conversation with Egidio Arlango was in Italian, I am presenting here a complete although summarised report of our meeting, with no direct speech, and the same goes for the other conversations in Italian, e.g. Cecilia Frosinini and Ezio Buzzegoli.

to interview a Venetian restorer. Thanks to Melissa Conn, director of Save Venice Inc. in Venice⁴¹³, in February 2018 I interviewed the head restorer Egidio Arlango who, at that time, was working on the restoration of Vittore Carpaccio's *Legend of Saint Ursula* cycle. We had an extended conversation about the production process of painting on canvas, and about the relevant factors that could minimise the damage when rolling it up for transportation purposes.

First, we compared Vasari's and Volpato's recipes for the painting ground. Dr. Arlango observed that, in his opinion, both the formulas could be considered valid for different reasons for a safe rolling operation; he was more in favour of Vasari's recipe, since it is well known that white flour naturally contains starch. Painting ground resulting from a starchy mixture would be more elastic than traditional gesso. An elastic and flexible preparation ground reduces the risk of cracks occurring during packing. But more than the ingredients selected for the *imprimitura*, Dr. Arlango stressed the importance of the *rasatura*, that is the act of spreading the thin layer of preparation with a knife. This method is cited in both treatises, but Volpato devotes special attention to the description of an adequate *rasatura*, explaining that the texture of the canvas must be visible throughout the priming layer. The Venetian restorer's personal conclusion is that the thinness of the layer is more important than the ingredients used to prepare the ground. Dr. Arlango added that sometimes very little fragments of wood are detected on the painting's surface, stuck in the painting ground: this is an unequivocal sign, he said, that the *rasatura* was occasionally executed using a wooden tool.

Other important factors for a safe rolling procedure: fabric, painting medium, paint thickness.

In addition to the preparation ground, another important factor, according to Dr. Arlango, is the quality of the fabric used as the painting support. When using a high-quality canvas, thin and with a very dense weave, only a small amount of preparation ground will penetrate the structure of the fabric, so

⁴¹³ I wish to thank Professor Louise Bourdua and Professor Tracy E. Cooper for suggesting me that I get in touch with the director of Save Venice Inc. during my Venetian fieldwork.

there will be a minor damage during the rolling procedure. On the contrary, a coarse and rough canvas allows a larger amount of preparation ground to penetrate into the holes of the fabric, with a higher risks of cracks occurring in transportation. Another relevant factor is the painting medium and its properties: oil is much more elastic and flexible than tempera, therefore an oil painting will be safer during transport. Finally, the thickness of the paint can also make a difference. A very thin layer (“a velatura”) is preferable, rather than a thick layer (“a corpo”, or “a impasto”), that can easily crack during the rolling-up.

Dating the Damage of Transport

Among the several questions I posed Dr. Arlango, I also asked if, by just observing the damage, it can somehow be possible to understand when exactly a painting on canvas had been rolled-up for transportation in the past. In other words, is it possible to understand when such damage occurred? Are we able to date the damage? The Venetian restorer replied that dating the damage is a very difficult task but, in general, when a painting is still relatively new (younger than 100 years old, he approximated) it tends to be more flexible and elastic. Therefore, if we observe very severe cracks caused by rolling, they might be the result of a later transport, carried out when the paint was totally dried out and polymerised.

Conversation with Peter Schade, Head of Framing Department at the National Gallery London, May 15th, 2018

Following the suggestion of my National Gallery supervisor Matthias Wivel, in May 2018 I met Peter Schade, Head of the Framing Department, to discuss the role of frames during the transport of paintings. I started by asking, according to him, how common was it in the Renaissance for a framed painting to be transported, and what is the difference between carrying a painting with the frame or without. Dr. Schade asserted that carrying a painting without the frame should be considered the norm, not because the

process is safer for the painting, but because it is easier. To quote him on this point:

“Most paintings in the past were transported without their frames, because transport is just easier if you do not have the frame. I do not think it is safer, but it is easier. I believe it is safer to keep the frame on a painting, because the frame could serve as a barrier to protect the front and the sides. Of course, unframed paintings on canvas can be rolled-up, they can be stocked much more closely together, and they can be transported much easier.

Then, Dr. Schade mentioned an example of paintings that arrived in the UK with their frames:

“The paintings that King Charles I bought came originally with their frames, which is interesting, because they had quite an influence on the frame-making activity in this country at the time. The peculiar style of those frames suddenly became fashionable in the UK. They were clearly influenced by Italian frames, and I think that also from the archives of King Charles I you can see that a lot of frames that he imported were Italian.”

Dr. Schade also observed that the low occurrence of surviving original frames in the entire collection of the National Gallery reflects the fact that the paintings were usually transported without: most of the Gallery paintings do not present their original frame, and the few examples of surviving original frames are due to the particular method of painting construction in earlier centuries. He explained:

“We could state that in our collection there are really few examples of original frames on paintings dating after 1520. There are a few earlier ones, but this is because, in earlier centuries, the frame was completely integral to the painting, at least in its conception. However, from around 1520 onwards the painting and the frame started to be separately made, and this is why none of the original frames survives, until the eighteenth century. This can also be explained with the shift from panel to canvas as support for the painting. I think that probably in the sixteenth century, in the majority of the cases, the

artists didn't frame their own works, instead the paintings were framed by specialised workers who designed palaces in style, and took care of everything that was installed in that specific location. Under their care, every painting was framed in the same way or in the same style."

When I asked to Dr. Schade if he could give me some information about the frame-making situation in Renaissance Venice, based on his own experience, he told me:

"When we put together the *Frames in Focus: Sansovino Frames* exhibition⁴¹⁴ and I had a look into the world of the frame-makers in Renaissance Venice, one thing that seemed to be very common (at least from what I could find) is that Venetian patrons often wanted to specify who would actually do the work. In Venice most framing operations were conducted by small workshops, very difficult for us to identify and to trace.⁴¹⁵"

We also discussed the transport of Tintoretto's Gonzaga Cycle from Venice to Mantua (in particular the four paintings known as the second series, transported by boat to be kept on the stretchers). In this specific case we are lucky enough to have the original letters, and we know that, while the paintings were travelling to Mantua, proper frames for them were produced at court, so the paintings arrived mounted on their stretchers and were framed and installed at destination.

"Even though those large canvases were shipped without their frames, I must say that the frame could have protected them better in transit. The frame is a neutral element and it does not implicate any mechanical pull or traction to the canvas, it does not affect the painting. At the same time, it can protect the edges and the front of the painting, and it can help to handle, touch and move it without having to touch the painting itself".

⁴¹⁴ The National Gallery, April 1st - September 13th, 2015.

⁴¹⁵ Regarding Venetian woodcarvers, Dr. Louise Bourdua suggested a book by Anne M. Schultz on *Woodcarving and Woodcarvers in Venice 1350-1550*, containing an alphabetical list of the some 800 woodcarvers she came across during her career. It would be a potentially very rich and useful source to enter the world of Venetian frame-makers at the time.

Visual evidence of the transportation of framed paintings is the work attributed to François Brunel II *The Confiscation of the Contents of a Painter's Studio*, c. 1590, (image 33). When I showed it to Dr. Schade, he observed:

“This scene is really interesting. In the painting we see canvases transported in very simple frames, with no ornaments that could be easily damaged, with nothing that can break off, they are probably made from oak and therefore they are very sturdy. This kind of frame is ideal to just give protection to the canvas during the transport, and we’ve got frames like these ones in the National Gallery that I can show you.⁴¹⁶”

Dr. Schade then took me to see the frame he personally made for NG 6665, a painting by David Teniers the Younger (1610-1690) representing *Christ Crowned with Thorns*, dated 1641, a gift from the collection of Willem Baron van Dedem in 2017. He observed how this frame, made from oak and quite strong, is similar to the black frames represented on the porters’ shoulders in *The Confiscation of the Contents of a Painter's Studio*. He pointed out that strength and firmness are not obvious properties for a frame; in a large number of cases frames are quite badly made and they can fall apart in handling, because they are made of pieces of wood carelessly nailed together with just small and weak nails.

The existence of frames intended simply to transport paintings, and destined perhaps to be replaced with frames “in style”, is a very interesting sidelight of this research. This type of basic frames, so simple in design, can sometimes lead to misunderstanding. For instance, Dr. Schade said:

“I remember a famous Poussin painting with his self-portrait that is very simply framed, with a very simple gold moulding, and for this reason many scholars were persuaded that Poussin’s frames must be simple in design. But

⁴¹⁶ Other paintings preserved in the National Gallery that Peter mentioned are: NG 1 (destined for the cathedral in Narbonne and expected to be framed there) and NG 664 (probably painted for an Italian in the Netherlands and then sent to Italy, it has no ground or a very thin ground).

I think that that particular frame served just to transport the painting, and to safely send the painting to the client.”

To conclude our meeting, Dr. Schade and I had a tour in the Framing Department, where every frame that has arrived at the Gallery in the past 40 years is kept and stored. Reflecting on the general topic of my research, he observed:

“Transport is probably the most dangerous moment in a painting’s life, even today. I think that the National Gallery lends approximately 200 paintings every year, and I am quite sure that there is at least small-scale damage every time you send something somewhere.”

**Conversation with Jill Dunkerton,
Senior Restorer at The National Gallery,
London, July 11th, 2018**

In the following pages I report my conversation with Jill Dunkerton at The National Gallery in July 2018. We addressed various issues, therefore I decided to divide my summary in several thematic paragraphs.

Choice of the painting support in relation to transport needs

I chose to isolate this fragment of conversation, although very short, because I think it is remarkable. Regarding the choice of the painting support, Dr. Dunkerton observed: “I think it would be wrong to assume that the choice of canvas is made entirely for transport.”

Preparation Ground

When I asked about the occurrence of flour (mixed with oil, according to Vasari’s recipe) as a painting ground, Dr. Dunkerton commented as follows:

“It is better to be a little bit careful in reading Vasari. I think that the problem with Vasari is that he may have no experience about what he is writing about.

Sometimes he picks up something he heard about, but maybe he never tried it himself.”

And then she explained that there is no evidence of preparation ground composed of flour in existing paintings:

“A huge amount of work has been done on looking at the grounds in Italian paintings from the sixteenth century (for example by my colleague Marika Spring) and we did never find anything like flour. I feel comfortable in saying that flour is not used as a ground for paintings. All the early painting grounds are composed of gesso, for example Titian uses gesso throughout his career. Then gradually, in the seventeenth century, you start to get coloured grounds, the brown ones.”

I reported to Dr. Dunkerton the opinion of Dr. Egidio Arlango, who said that “colla di farina” could have been used as a ground, probably because it was more elastic since the presence of starch. She commented:

“It could have been used, but the problem is that there is no evidence in paintings. It is not a normal ground, and for sure it is not commonly used in Renaissance Venice.⁴¹⁷ We have been reading and testing quite a lot, and we usually find glue and then gesso, and then these coloured ground in the seventeenth century where you can find some starch as a component in the mixture (and it could be from flour, amido), and obviously this makes the ground more elastic.⁴¹⁸ But I do not think we have ever found presence of starch in sixteenth-century paintings. I think starch is sometimes found in coloured grounds in later times, and not in Venice, where we always find gesso and very occasionally the gesso is made with calcium carbonate, and not calcium sulphate, but still it is essentially gesso mixed with glue. It is perfectly possible that one of the causes of evolution to coloured ground is

⁴¹⁷ She also mentioned *pasta fiorentina* that is made of flour and other ingredients, and used for relining.

⁴¹⁸ A mention of the shift to a darker preparation ground, to be considered more flexible and more suitable for transport (starting from the mid-sixteenth century), can be found in De Luca, Daphne, *I Manufatti Dipinti su Supporto Tessile. Vademecum per Allievi e Restauratori* (Il Prato: 2012).

that they allow the canvas to be more flexible, but in my opinion it had mainly to do with changes and needs of painting technique. Moreover, I think that a ground made of flour would be too prone to damage.”

When I asked Dr. Dunkerton to tell me something more about the brown preparation ground, she continued:

“It is basically more like a brown paint, because it includes oil in it, with brown pigments. In a lot of sixteenth-century paintings you find first gesso, and then the brown layer. This practice starts back with painters like Correggio, Parmigianino and Dosso Dossi for example, but it is not very Venetian. So you still have the gesso underneath and then the brown, then gradually the gesso starts to disappear by the seventeenth century, and painters like Moretto use no gesso.”

About the use of brown grounds in Venice, Dr. Dunkerton said:

“All Venetian painters use the traditional white gesso.⁴¹⁹ As I mentioned above, Titian uses gesso throughout his career. Veronese always uses gesso, and sometimes his imprimature can be lightly coloured (grey) but not dark. What surprises me about Tintoretto is how late he began to shift to the dark grounds, because we associate him with dark grounds but initially he didn’t, and he continued to use sometimes a little bit of gesso⁴²⁰. In a later time, Venetian painters of the seventeenth century used coloured grounds, but this change happened also in many other places at the same time, both in Italy (e.g. Bologna) and outside Italy (e.g. Spain)”.

Since brown grounds are more elastic than the simple white gesso, I asked Dr. Dunkerton if she thinks that this evolution of the preparation ground can

⁴¹⁹ In the National Gallery Technical Bulletin it is possible to read about Titian’s ground; the same detailed studies have been done for Veronese’s paintings.

⁴²⁰ See *Tintoretto’s Painting Technique* and *Tintoretto and the Sister Arts*, that are Jill Dunkerton’s contributions to the catalogue curated by Miguel Falomir for the exhibition “Tintoretto”, Museo Nacional del Prado, January 30 - May 27, 2007 (Madrid: Museo Nacional del Prado, 2007).

be partly considered a conscious decision in order to have a more elastic canvas, easier to roll-up. She replied as follows:

“No, I do not think that this change had to do with transport needs. Instead, I think it had to do with the painting practice and colour choices. I do not think that transport was primarily the reason, and we always have to bear in mind that little changes might have happened for other reasons than transport.”

This assertion by Dr. Dunkerton's statement reminds me that at the conference “Giornate di Studio nell’anno di Tintoretto. Riflessioni, Ricerche, Restauri”, Dr. Lorenzo Lazzarini (luav) extensively discussed the use that the Venetian painter made of dark preparation grounds (he alternated brown grounds and clear ones). This type of dark *imprimitura*, he said, allowed the painter to save time and painting materials, since he could directly use the dark *imprimitura* as background for the painting with no need to paint it to make it darker. Technical analysis revealed that sometimes Jacopo Robusti prepared his paintings with leftovers, mixing various pigments he already had on his palette.

Another painting by Tintoretto with no preparation layer comes to my mind: it is the recently restored canvas representing *Le Nozze di Cana* in Santa Maria della Salute. The reason of this technical choice is still debated among scholars, and one hypothesis is that Tintoretto was simply experimenting with materials, since he wanted his painting to look like a tapestry.⁴²¹

Finally, Dr. Dunkerton addressed the great importance of spreading the preparation ground in a very thin layer:

“The critical thing is that the ground must not be too thick, you should be able to see the texture of the canvas throughout the ground. If you use the ground to cancel the texture of the canvas it will flake, because it becomes very brittle at some point. That would happen even if you didn’t move the canvas,

⁴²¹ This topic was discussed by Professor Frederick Ilchman and the restorer Valentina Piovan on occasion of an interesting round table that I attended at Save Venice Inc. in 2017.

because with age the threads of the fibres will be reacting to humidity, and it would make transport worse most definitively.”

Dating the Damage of Rolling Procedure

Dr. Dunkerton confirmed that when a canvas is newly painted and the layer of gesso is not too thick, it is still quite flexible, because it is only age that makes it brittle. Therefore, when we find very severe damage on a painting, it is usually due to a later transport.

Unsafe Transport

Dr. Dunkerton observed that we cannot assume that paintings were always transported correctly. In general, the essential precautions to transport a painting safely were known and adopted by painters and porters, but still we do not know if every now and then someone did something inappropriate and the painting got damaged. Sometimes it was possible that canvases were rolled badly (it is important to roll the painting with the paint layer outmost, otherwise you compress the painting), or sometimes the roll might not have been very well protected or it had some weight put on it, and the result of this bad handling is cracking and horizontal damage.

Fabrics for the painting support

We had a brief conversation about fine canvas and rough canvas in relation to the rolling procedure. Dr. Dunkerton observed that robust coarse canvas is very strong, and many paintings made on it are still in good condition today, even if they must have been rolled. For example, Veronese commonly used robust canvas, and she mentioned his large-scale paintings in the National Gallery.

The difference between tempera and oil painting, and the association between oil and canvas

I asked Dr. Dunkerton if she thinks that the painting medium (tempera or oil) can affect the level of damage in transport, or if the gradual switch from tempera painting to oil painting could have been influenced by needs of transport. She replied as follows:

“Tempera is not the most suitable medium for canvases that are going to be moved. In fact, only a few tempera paintings survives on canvas, like some of the early canvases by Jacopo and Giovanni Bellini, or canvases by Mantegna. They probably got moved a lot (even before they came to England) and one of the reasons why they are in a very bad condition could be that they are in tempera with gesso on canvas.

But there are also tempera paintings on canvas in very good condition, like the large-scale S. Sebastian by Mantegna in the Louvre: it was painted for export to France, and it is still in very good condition, although it is on a canvas support. So providing paintings are treated well, it is all right, and it may just be a coincidence that the great expansion of Venetian paintings happens when they switch to oil. And a very interesting thing is that in Florence, where they are generally slower in moving to oil painting than in Venice, there seem to be quite a strong association between oil painting and canvas painting, and there are documents describing lost paintings by Domenico Veneziano or Paolo Uccello which are said to be oil on canvas... So there may be an interesting link not so much in Venice but in Florence, and they seem to be using oil on canvas before they seriously start using oil on panel.

In general history, I think there is a very early association between oil and canvas, and I think it makes sense (think about very early canvas paintings in Ferrara - by Tura or by Cossa - which are very dark now but they are oil). Tempera dries quite quickly because it contains water, and the water evaporates, and eventually the proteins set to make a very hard white brittle material, which cannot be rolled without damage. On the contrary, especially when it is fresh, oil is much more elastic, and it will take years and decades to become brittle. The process is called polymerisation: the oil polymerises and does not dry because nothing is evaporating, but slowly if you are painting

oils they will set and eventually they will become hard and brittle but it takes a very long time, so this is why a painting in oil is more flexible.”

Suggestions for further research

Like my supervisors and other scholars I met during my research, Dr. Dunkerton stated the importance of considering the theme of transporting Renaissance paintings not only by focusing on Venetian canvases, but by opening the field to other geographical areas and other types of artworks. For example, it is interesting to consider what happens in Rome (through, for example, the study of the transport to Narbonne of the *Resurrection of Lazarus* by Sebastiano del Piombo, NG1); or to inspect the activity of a single workshop, for example the shipping works from the Vivarini workshop and its connections in Southern Italy, where Bartolomeo Vivarini used to ship a large number of panel paintings, that could be broken down into smaller units.⁴²²

Another intriguing topic that Dr. Dunkerton would love to see investigated more is the relationship between sailcloth and the Venetian painters' canvases. She does not think that great Venetian painters (even Tintoretto) ever used second hand sails, which had been exposed to sun, wind, and salt, because the fibre would be very damaged. This kind of material could have been used for very cheap decorative paintings, and we must not forget that a lot of painters were producing ephemera for the theatrical spectacles, or processions, guild processions...a lot of that could have been produced on second hand sails, if only we can retrace the documentation.

Finally, the conversation that Dr. Dunkerton and I had about *Bacchus and Ariadne* by Titian (NG 35) is reported in the chapter devoted to the paintings preserved by the National Gallery.

⁴²² About this, Dr. Dunkerton suggested the work done by A. Griffiths, “Bartolomeo Vivarini”, MA thesis, Courtauld Institute, University of London, 1976.

**Conversation with Dr. Cecilia Frosinini, Faculty Member at Conservation
Department,
and Dr. Ezio Buzzegoli, restorer,
Opificio delle Pietre Dure, Florence, July 13th, 2018**

Observations on easy handling

Ease of transport and the needs of convenient handling are often relevant factors in the painting practice. For example, the choice of different types of wood as painting support can be related to easy handling, and not necessarily only to the ease of supply; in the same Tuscan territory - but in different times - it is possible to observe the use of either chestnut or poplar for panel paintings, both kinds were available throughout the ages. The preference for one wood or another can also be attributed to the specific weight of the type of wood: poplar is much lighter than chestnut, therefore poplar is preferred when it comes to the production of artworks destined to be hung as the partition wall in a church (*tramezzo*). For example, it would have been very demanding to install the large-scale crosses painted by Giotto, if they had been made with chestnut wood. Of course, it is important to remember that at the origin of these technical choices there might be also other reasons than transport. In this case, for instance, we need to remember that chestnut is rich in tannin which makes it unassailable by wood insects, on the contrary poplar is very palatable for wood insects. In addition, surviving records testify that not only workers circulated around different workshops, but paintings also were moved during the process of their execution. The famous polyptych by Ugolino di Nerio, for example, was transported to various workshops before entering the church of Santa Croce to be installed.

Commenting on Giorgio Vasari and his formula for the preparation ground

This conversation continued with some relevant comments about Giorgio Vasari and his interest in transportation. It is well known that Vasari showed some interest in the “transport factor”: he suggests to spread flour glue and walnut oil on the canvases destined to be rolled-up, and he believes that the switch from panel to canvas also happened to facilitate transport procedures. Commenting on this, Dr. Cecilia Frosinini observed that Vasari was an artist, and he knew how to manipulate materials. On the other hand, as an author of treatises he knew very well how to promote a certain tradition over another. Therefore, he certainly does not write by impulse, but he follows a consolidated tradition. Even the sections devoted to the various artistic techniques, as well as the *Vite*, need to be contextualised. Generally, artistic treatises are permeated by the idea that “art can last”, therefore we must adopt a series of expedients and techniques to make it last as long as possible. The concept of *transportability* of the artworks, together with their *durability*, is a literary and technical *topos*, with its own history across the literature. And certainly not only Vasari’s treatise, but all treatises from sixteenth and seventeenth century depend in some way on the previous ones.

Then we had a long discussion about the preparation ground for canvases, in particular with Dr. Ezio Buzzegoli, who started as follows:

“According to my knowledge, I can tell you what I know from the point of view of the materials. When Vasari writes about “colla di farina”, he means cooked flour. It must be intended as a paste of water and flour with a slightly adhesive power when warmed up, since the process pulls out the starch from the flour. This product itself, which we use for restoration works, wouldn’t be a guarantee of greater elasticity, because water and glue form a fairly fragile and crumbly mixture. But Vasari suggests to add walnut oil to the mixture, and this ingredient makes the recipe plausible on a technical level, especially if spread in a very thin layer. In fact, the presence of walnut oil reduces the crumbliness and increases the elasticity, and this could easily be a valid

recipe for a preparation ground. However, we cannot be sure that Vasari had really prepared his canvases with flour, water and walnut oil. He might have gained some scattered information about this practice, but perhaps he never experienced them first hand. Authors of treatises know very well the technical problems they write about, but they do not always report something they have direct experience with. It is not a coincidence that in some treatises, at the end of the recipe the author writes if he himself had tried the formula or not. As I did with other experts in the field, I also asked Dr. Buzzegoli if, in the course of his career as a restorer, he happened to find paintings on canvas prepared with the mixture prescribed by Vasari. He replied as follows:

“Personally, I have never found a painting with a preparation ground composed of flour and walnut oil, and I feel confident in saying that there’s no relevant tradition or painting school that follows this particular procedure. In nineteenth-century paintings by Benvenuti, for example, we can observe the presence of starch or flour, which caused considerable problems because the flour clogs the holes of the canvas, but this is a different timeframe and context.”

Types of gesso

Then, Dr. Buzzegoli gave me further information about the various types of “gesso”, which all derive from calcium sulphate. Gypsum is almost completely inert, which means that it is almost insoluble in water. For this reason, the addition of glue is essential: without the glue, gesso and water cannot mix together⁴²³. The most used types of gesso are the following:

- “gesso a legno”,
- “gesso a muro” (quite rough, compared to the other types),
- “solfato di calcio anidro” (it is so greedy for water that, if you add water to it, in a few minutes the plaster condenses and becomes hard. It has been extensively used in sculpture, although it has been partly replaced by silicone in the 60s. It is still used in craftsmanship).

⁴²³ With the exception of “gesso a formare”, as it is possible to read in the bullet list that follows.

- “solfato di calcio bi-idrato” (It is a thinly grounded plaster, also called “gesso a oro”, “gesso Bologna” or “gesso Firenze”, and it is used for preparation grounds. Differently from “solfato di calcio anidro”, it is composed of two molecules of water in its formula, therefore it is almost unreactive to water, and it needs the addition of glue to aggregate).

Types of glue

Moreover, it is essential to make some clarifications regarding the glue used in preparation grounds. There are various types of glue, and each glue has its own peculiarities. For example, to glue two planks of wood you can use a strong animal glue, the so-called “colla forte”, which is less elastic but has a greater adhesive power. Differently, to make the preparation ground it is better to choose more elastic glues, such as rabbit glue, or glues made from materials such as animal ears, cartilage, or parchment scraps. Fish gelatin is an animal glue but it is even more elastic, it folds really easily but it has less adhesive power. Normally, the preferred glue for preparing panels is “colla di caravelle”, made from goat or rabbit skin, because it has an average gradation between elasticity and adhesive power.

To prepare a canvas, it is necessary to further vary the elasticity and the thickness of the ground layer, because a canvas cannot bear an excessive weight, otherwise it breaks. Some authors suggest to add honey, others (in a later period) promote the addition of sugar, others are in favour of various types of oil, and everyone suggests different quantities. Obviously, the reason for wanting to obtain different thicknesses or different elasticity is not always directly connected with ease of transport, but may also be due to, for example, a convenient handling of the painting during execution.

Dr. Buzzegoli specified that, during the process of relining, a more elastic glue can be used, in case the painting is expected to be rolled-up afterwards. He also said that, until thirty years ago, the Italian glue named “Vinavil” was sometimes used in relining, to increase the elasticity of the painting.

Pasta Fiorentina⁴²⁴

Dr. Frosinini specified that, although the Vasarian recipe for the preparation ground is not much used in painting practice, the materials listed by Vasari are traditional ingredients of the so-called “Pasta Fiorentina”, used until not many years ago for restoration works, and more specifically in relining operations. Pasta Fiorentina is an adhesive mixture of materials set up by Augusto Vermehren⁴²⁵, a German physicist and chemist, who studied this matter empirically but systematically. He aimed to obtain a mixture that was both easily spreadable and elastic. In addition to this, he wanted to obtain a high level of elasticity, in order for the flexibility of his mixture to be as durable as possible. Vermehren's final recipe consisted of a well-balanced mixture of the following ingredients: flour, water mixed with glue, flaxseed (the jelly part, important to absorb the excess of humidity, and the oily part, important to increase the elasticity), and finally Venetian turpentine (also necessary to regulate the level of humidity).

⁴²⁴ Here I copy the definition of *Pasta Fiorentina* from Cristina Giannini, *Dizionario del Restauro, Tecniche Diagnostica Conservazione*, curated by Cristina Giannini, Roberta Roani, Marcello Picollo, Giancarlo Lanterna, Deodato Tapete (Nardini Editore: Firenze, 2010), p. 125: “adesivo a base di colla impiegato nella rintelatura; ha varie formulazioni secondo l'epoca e la localizzazione (“pasta romana”, “pasta fiorentina”, “pasta bolognese”) ed è generalmente composta di farina di grano, farina di semi di lino, acqua, colla, trementina veneta, melassa e agenti biostatici; gli ingredienti scelti si fanno cuocere a bagnomaria e la pasta così ottenuta viene passata calda sulla tela per farla aderire a quella nuova. Il termine si usa anche come sinonimo di materiale vetroso o ceramico, per mosaici (“pasta vitrea”) e intarsi.”

⁴²⁵ Dr. Buzzegoli focused further on Augusto Vehrmeren, the well-known German restorer (1888-1978) who contributed many innovations to restoration science. Among his inventions there is, for example, the stereoradiography of paintings, and he built radiographic devices with his own hands. Furthermore, he could be considered an interventionist in the field of restoration, and he introduced very dangerous (and sometimes lethal) solvents into the restoration laboratories (like the pyridine and the butylamine he used to clean paintings, both recognised as cancerogenic) because at that time health protection wasn't highly considered. Together with Ugo Procacci and Gaetano Lo Vullo, he embodies the scientific current of the Florentine Laboratorio di Restauro at its origin, since they combined scientific research with restoration practices. Thanks to his union of meticulous and scientific approach with the manufacturing skills of painters and artisans in Florence, the “scuola fiorentina” originated. He also was technical director of the ICR in Rome, and he died at the venerable age of 94 years old.

Observations on the production of large-scale canvases

Dr. Buzzegoli and Dr. Frosinini believe that large-scale canvases were not directly painted on their final stretchers, but more likely on rigid surfaces like large wooden tables. It is logical to think that large-scale canvases were fixed to their final stretchers only towards the end of the production process, when the size of the canvas had finally been established. Otherwise, due to the natural variations in size caused by the processes of preparation, painting and transport, the canvas could have hung loosely on its frame. This is because, during the production, the canvas would become damp and moist, the fibres would increase in volume and the canvas would undergo a natural contraction. The opposite happens when the painting dries: the fibres lose moisture, they relax and stretch, and so does the whole canvas. Undoubtedly canvases, once purchased by Venetian painters, were not immediately used. Before a canvas could be used as painting support, it was important to treat it in a proper way, in order to prepare it for painting. Spreading the preparation ground, for example, was a very important step of the production process, to be done all at the same time in order to create a uniform ground. Large-scale canvas had to be prepared all at once and keeping the canvas in a horizontal position: this would allow the canvas to be prepared homogeneously, without any irregularity or patchiness. As Dr. Buzzegoli says, in some cases the back of the painting helps us to understand that the preparation was done with the painting resting on a flat surface. On the back of *The Birth of Venus*, for example, flat drops of chalk indicate that the canvas had been prepared horizontally, lying on a horizontal surface.⁴²⁶ Another good reason why we can imagine that canvases were often prepared on a rigid surface, is the weight of the materials they had to support. Especially in case of large-scale canvases, a rigid horizontal surface could prevent the canvas from breaking during the process. Dr Buzzegoli and Dr. Frosinini suppose that, if the painting needs to be prepared horizontally, it could stand in a vertical position during the actual execution, because the painter might need to see the

⁴²⁶ Dr. Buzzegoli is remembering a conversation he had with the restorer Alfio Del Serra about *The Birth of Venus* by Sandro Botticelli. Moreover, it seems that that painting was performed on canvas to be transported from the place of execution to the destination.

painting from a distance. This is a very important point to study the perspective of the composition, and to look at the artwork in its final position. In conclusion, according to Dr. Frosinini and Dr. Buzzegoli, large-scale canvases had to be held horizontally during some steps of their production, and vertically during others. From this we can deduce that large-scale paintings were already considerably moved during their production.

At this point we had a long conversation about the well known “Cleaning Controversy”, which is not reported here because is not related to the main topic of transport. Then, after a discussion about some doubts I had regarding the phenomenon of “delamination” Tintoretto’s paintings⁴²⁷, we moved to the topic of the painting medium in relation to transport.

Tempera and oil: painting medium and ease of transport

Dr. Frosinini rightly reminded me that in Venice the shift of tempera painting in favour of oil painting was mainly due to climatic reasons: tempera painting is mixed with egg, which does not tolerate moisture. Secondly, this change is also due to aesthetic reasons: oil painting allows the painter to obtain aesthetic effects that could not be achieved with tempera paint. In her opinion, we must not be tempted to put the “transport factor” at the origin of such technical development.

Dr. Buzzegoli specified that oil painting was not new and unknown in Renaissance, instead it was simply reactivated and reworked. It is sufficient to remember that the binding power of oil as a painting medium was well known at the time of Ancient Rome, when the emblems of taverns were painted with oil, in order to be more resistant outdoors. Egg tempera works much better on gypsum and gilding, therefore oil painting became progressively less used in the production of altarpieces. But it is essential to remember that oil as a paint medium was never completely abandoned, and very often oil-based veining can be detected on tempera painting. In addition to this, some types of pigments can only be mixed with oil. Very often both oil painting and tempera painting are used in the same artwork; indeed the story of painting medium is anything but linear, and is rich of mystifications.

⁴²⁷ The results of this conversation are summarised in the section devoted to Tintoretto and the phenomenon of *delamination*.

Observations about types of canvas

Regarding the painting support, I asked if the choice of a certain type of fabric over another, together with the recipe adopted for the painting ground, could have affected, in some way, the ease of transport. Dr. Buzzegoli said that it would be tempting to answer this question affirmatively. However, it would be beneficial to conduct a research on the various types of canvas used within the same workshop to paint either small or large-scale paintings, in order to understand how much the choice of the canvas was the result of a serious and careful consideration. In his opinion, the choice of the type of the canvas depends first of all on the dimensions of the painting, and it is always related to the consideration of the weight it must support. Indeed, the ground layer and the painting layer can be very heavy if the canvas is large-scale. Therefore, the canvas is required to have a certain mechanical resistance, which depends on the type of thread, on the type of weaving or on the thickness of the thread. A normal canvas (twill canvas or *tessitura a tela*, with just a single overlapping of the weft on the warp) dilates more in the direction of the warp, and less in the direction of the weft. Herringbone canvas has the greater mechanical resistance thanks to the orientation of the fibres, that is almost random. In a herringbone canvas, the thickness of the thread can be even slightly less than in a twill canvas.

At the end of our conversation about canvas, Dr. Frosinini and Dr. Buzzegoli suggested that I get in touch with Dr. Claudio Seccaroni.⁴²⁸

Dating the damage of transport

When I asked if there is a substantial difference between transporting a painting right after its execution, and transporting it much later, Dr. Frosinini replied as follows:

⁴²⁸ He is a researcher at ENEA, and he wrote extensively on canvases used by Mantegna and by Caravaggio - proceedings of a technical conference have been published by Nardini Editore, 2010.

“The damage that a painting reports during transport is very much affected by its age at the time of the rolling-up. When an old painting is rolled-up, the risk is to lose a part of it, and to have cracks and cleavage. This is due to the fact that when a painting gets old, it loses its general elasticity: the oils undergo polymerisation, the fabric’s fibres deteriorate, and the same happens for every other material component of the artwork.”

And Dr. Buzzegoli added:

“In the late nineteenth century and early twentieth century, freshly made canvases were rolled-up to make them look ancient. In fact, the cracks caused by the rolling look very similar to an original craquelure. The procedure was the following: instead of painting directly on a panel, the forger worked on a light canvas. After the painting was finished and dried out, the forger rolled it up around a pole, and broke it with his hands, to create a fake craquelure.”

Rolling-up paintings today

It is well known that the most convenient method to transport historical large-scale paintings on canvas has always been the rolling-up of the painting on a “controforma”. Nowadays, these tools (“controforme”) are still used to move paintings around, and the larger the painting the wider their diameter. It is evident that when one has to carry a painting, one of the first evaluations is whether the painting can be rolled or not. In any case, the rolled paintings are almost always protected with tissue paper. Dr. Cecilia Frosinini recalled the two large-scale paintings by Rubens, damaged by the bomb explosion in the Uffizi gallery and restored in the Opificio delle Pietre Dure. These paintings had to be rolled on “controforme” in order to be moved to the restoration site and back, because they could not be transported up the stairs due to their large size.

Appendix II - Database of Chapter IV

The tables that I present here are the result of my investigation of the National Gallery collection, conducted in order to select the most interesting paintings for my analysis. They can work as a tool to summarise and effectively visualise the case-studies presented in Chapter IV. Therefore, the order of presentation corresponds to the structure of the chapter, and the artworks listed in the tables are divided into various sections, according to the type of damage they present. For each painting it is possible to find information about how its support is constructed and prepared for the paint, about its various journeys before arrival in the National Gallery (handling and transport history)⁴²⁹, and about aspects of its physical condition that are relevant for this research.

⁴²⁹ This database does not take into consideration the paintings' various journeys for display in temporary exhibitions, shipments which must be taken into account in a more detailed study of each single artwork's movements.

DAMAGE CAUSED BY PACKING: ROLLING- UP

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Titian	Bacchus and Ariadne	NG 35	1522-3	176.5 x 191 cm	oil on canvas	fine tabby weave canvas	thin layer of gesso this thin layer of gesso might have been a conscious choice on Titian's part, in order to make his canvas more flexible to be rolled up	painted for Alfonso I d'Este's Camerino d'Alabastro, in his palace in Ferrara	Thanks to surviving documents, we know that in 1523 the painting was transported from Venice to Ferrara "by a single porter on his shoulders"; in 1598 transferred from Ferrara to Rome; in 1806 or 1807 moved to London	vertical cracks and horizontal cleavage due to rolling-up, probably happened when the painting was rolled when it was old already (50 or 60 years after the execution) and it was transported to Rome (figs. 53-58)
Titian	La Schiavona	NG 5385	c. 1510-12	119.2 x 100.4 cm	oil on canvas	robust twill weave canvas (this type of distorts less when stretched than plain weave canvas, and so there is little cusping)	The canvas was prepared with gesso, followed by an <i>imprimitura</i> very close in composition to Titian's other works from around 1510-14 in the National Gallery, and especially similar to that of the <i>Portrait of Gerolamo Barbarigo</i> . It can be seen in places around the edges of the painting and has a warmer, more creamy colour than the cold greyish white on the Barbarigo portrait. It is again based on lead white with a little lamp black, but perhaps including a little more of the dolomite-rich yellow earth.	portrait of an unknown woman probably from Dalmatia - we don't know the identity of the sitter and the original destination of the painting	presented through the Art Fund by Sir Francis Cook, Bt., in memory of his father, Sir Herbert Cook, Bt., in 1942	the x-ray shows the location of retouched losses of paint and ground along fine roughly horizontal creases, that were probably caused by the rolling of the canvas for transport in the past . Even in this case, in fact, it seems very unlikely that such consistent damage occurred when the pictorial material was still relatively fresh and elastic. The signs of damage in this painting are very similar to those visible in the canvas of <i>Bacchus and Ariadne</i> , only their direction is different (figs. 59-61)
Giuseppe Salviati	Justice	NG 3942	c. 1559	90.2 x 125.1 cm	oil on canvas	twill weave of herringbone pattern, running horizontally; a canvas of a different weave has been added to all the sides except the lower one, to form an approximate semicircle - this extension seems to date back to the 1808, and may have been made with a knowledge of the previous shape.	the catalogue does not give any information about the ground	the painting may have served as an overdoor, or have filled some equivalent arched space.	<ul style="list-style-type: none"> - Almost certainly corresponds to a lunette of Justice listed among a group of paintings sent from Venice to Milan in 1808. - the painting's subsequent history is not clear but it found its way into the collection of George Cavendish Bentinck, which was largely formed in Venice - on sale at Christie's in 1891, purchased by Richter for Ludwig Mond - Mond died in 1909 and after the death of his widow (in 1923) the bequest of his pictures to the National Gallery came to effect. The Mond Room was opened in January 1928. Public display is most unlikely in its present condition. 	numerous vertical cracks in the paint surface, perhaps caused by rolling of the canvas . the photographic material made available in the painting's conservation dossier is not entirely sufficient to document what was set forth in the catalogue (figs. 62-63)

DAMAGE CAUSED BY PACKING: ROLLING- UP

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
After Titian	The Trinity	NG 4222	Late seventeenth-century?	131.6 x 100 cm	oil on canvas	<p>tabby-weave canvas of a medium weight</p> <p>it has been paste on to a finer tabby-weave canvas</p> <p>cupping is only evident along the upper edge, but there are no significant reductions to the painted surface</p>	ruddy brown ground of a kind that was especially favoured in Italy (but also found in Spain) during the seventeenth century and later.	it is a copy of Titian's large canvas generally known as 'La Gloria' (preserved in the Museo Nacional del Prado)	<ul style="list-style-type: none"> - in the commonplace book compiled by Samuel Rogers (banker, poet and collector, who had a penchant for smaller versions of large paintings) is recorded a story dated January 1819 concerning this painting, told him by the Danish Minister in London Mr. D. Bourke. The painting was said to have hung in the billiard room of a low tavern in Madrid, and the players used to strike their cues against it when they lost. when the landlord of the tavern was arrested for murder the painting was auctioned at the jail and bought for a dollar by a man who rolled it up and carried it away. soon after he sold it for five dollars to a friend who expressed curiosity about the roll, then the Danish minister bought it unseen for 70 guineas. it is not impossible that the painting really did come from a Madrid tavern, but low-life provenance of this kind are sometimes used to discourage enquiries about a picture's true origins. - at Rogers's posthumous sale bought by Lord Harry Vane in 1856 - at his posthumous sale bought by Sir William Corry in 1902 - at his sale bought by 'Mears' for Colnaghi in 1926 - from them it was acquired by the National Gallery in 1926. 	The surface is badly cracked, perhaps on account of the canvas having been rolled up, as is said to have happened in the early nineteenth century. the surface damage described in the catalogue as due to the rolling up looks, in my opinion, more like a surface craquelure of the pictorial film (figs. 66 and 67). Some traces are perhaps more ascribable to other accidental events that happened to the painting, rather than to a rough rolling procedure (fig. 65)
Paolo Fiammingo	Landscapes	NG 5466 and 5467	c. 1590	185 x 206.5 cm and 185 x 206cm	oil on canvas	both paintings are on heavy canvas of a herringbone weave. both canvases are composed of two pieces with a horizontal seam approximately halfway down the painting.	the canvases were prepared with a thin ground of white gesso (calcium sulphate). This ground is covered by an imprimatura of lead white toned with carbon black and red earth, to make a pale brown colour which in some areas was never completely covered by paint.	they may have been painted as mural decoration covering an entire wall above a basamento, with pilasters perhaps dividing them, rather than as framed pictures.	They are known to have been rolled-up before being bought in Venice in 1892, then relined and restored in London	Despite having been rolled-up, the catalogue doesn't mention any damage occurring in transportation , but only some "losses along the canvas seam"; it also states that the two landscapes were executed very hastily by the painter.

DAMAGE CAUSED BY PACKING: ROLLING- UP										
Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Lorenzo Lotto	Portrait of a Woman inspired by Lucretia	NG 4256	c. 1530-2	96.5 x 110.6 cm	oil on canvas	fine tabby-weave canvas	gesso ground (calcium sulphate) with a light brownish-grey priming consisting of lead white with a little black and possibly some umber	Probably painted for Palazzo Pesaro, Venice	in Palazzo Pesaro in Venice by October 1797; with the Abate Celotti by July 1828; acquired by James Irvine in November 1828; in the studio of the Bolognese restorer Giuseppe Guizzardi in the winter of 1828-29; owned by Sir James Carnegie by July 1855 when bought by Robert Holford; sold by the heirs of his son at Christie's on 15 July 1927, when purchased by The National Gallery	transport damage is not mentioned in the catalogue, but is suggested by my observation of the x-rays. I observe cracks that could be related to rolling-up (figs. 68-70)

DAMAGE CAUSED BY PACKING: FOLDING

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Lorenzo Lotto	The Virgin with Child with Saint Jerome and Nicholas of Tolentino	NG 2281	1522	91 x 75.4 cm	oil on canvas	medium-weight tabby weave	cream-coloured imprimitura composed of lead white, combined with some lead-tin yellow, on a gesso ground (calcium sulphate)	The pictures were probably painted towards the end of the period that Lotto spent mainly in Bergamo	Property of Mrs Martin Henry Colnaghi by 1895; Bequeathed in 1908.	transport damage is not mentioned in the catalogue, but is suggested by my observation of the x-rays. I observe damage that could be related to folding (figs. 71-72)
Jacopo Tintoretto	The Origin of the Milky Way	NG 1313	c. 1575	149.4 x 168 cm	oil on canvas	medium-weight twill weave (but with one addition of herringbone twill) It has been trimmed irregularly the painting had been cut and the lower part of the composition is now missing (reconstruction based on a copy of the painting made before it was cut) it has been wax-lined on to a canvas of medium-wight tabby weave	the canvas has no gesso ground, only a dark brown priming layer composed of pigments of numerous colours in drying oil (described by Plesters as a 'palette scraping ground'). The artist's preliminary brush drawing with lead white was made on this dark ground. Linseed oil is the medium	the iconography is connected with the Medal of Tommaso Rangone, a physician from Ravenna, and with the sculpture of him on the facade of the church of San Zulian	<ul style="list-style-type: none"> - the painting was not in Rangone's possession when he died - it compares in the posthumous inventory of the Holy Roman Emperor Rudolf II's paintings made at Prague in 1621, and also Ridolfi says that Tintoretto painted for Rudolf II 4 mythologies, maybe the 4 paintings must have comprised a flattering message for the emperor (no painting could have been better designed to please him) - in the collection of Duc d'Orleans, Regent of France, by 1724 - sold at the Italian portion of the Orleans collection at the Lyceum, London, in 1798, where bought by Bryan - sold probably by Bryan to the Earl of Darnley - purchase from the Earl of Darnley in 1890 	the painting presents the signs of a rough fold , in correspondence with the horizontal seam at the bottom (figs. 73-74)
Jacopo Tintoretto	Christ Washing the Feet of the Disciples	NG 1130	c. 1575-80	204.5 x 410.2 cm	oil on canvas	complex structure consisting of one long horizontal piece of heavy twill, and four vertical pieces, with a long strip of canvas of a medium tabby weave along the top and another strip of the same down the left side	the canvas has a gesso ground, on which there is a priming of appreciable thickness (of charcoal black, but including other pigments, perhaps from palette scrapings)	companion with the Last Supper (still in situ), the painting long hung in the first recorded transept chapel of the Most Holy Sacrament in the parish church of San Trovaso in Dorsoduro (Gervasio and Protasio), Venice, commissioned by the Fraternità del Corpo di Cristo, also known as the Scuola (or Confraternity) of the Santissimo Sacramento of San Trovaso (is the only scuola that survives today, documents in the parish archive dated to 1536 and 1543) the position of the two paintings was originally inverted	<ul style="list-style-type: none"> - painted for San Trovaso in Venice - removed from the chapel after 1715, perhaps around 1790 - sold to Sir Joshua Reynolds - certainly in th Hamilton collection by 1835 - bought for the Gallery at the Hamilton sale in 1882. it was the cheapest of the dozen paintings acquired by the Gallery on that occasion, no doubt partly on account of its inconvenient size. It must always been hard to know where to hang it, at the beginning it was put over the stairs in the entrance hall, but when the paintings where rehung after the Second World War it was given a place with the great Venetian paintings of the Sixteenth century. 	in addition to the losses along the main horizontal seam there is a line of other losses slightly lower down, perhaps corresponding to a fold in the canvas (figs. 75-76)

DAMAGE CAUSED BY PACKING: FOLDING

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Follower of Jacopo Bassano	The Adoration of the Shepherds	NG 1858	c. 1600-25	65.4 x 91.8 cm	oil on canvas	fine tabby weave canvas it has been lined on to a coarser canvas also of a tabby weave	priming consisting of a coarse black pigment not unlike that found on Bassano's Purification of the Temple (NG 228)		Bequeated by Sir John May in 1847, it was neglected (it was not assigned a NG number until the early twentieth century).	there are two distinct horizontal lines in the surface , one about 11 cm from the lower edge and the other 19 cm from the upper edge: these suggest that the painting was at one time folded . the conservation dossier contains an infrared image where we can observe these signs quite well (figs. 77-78)

DAMAGE CAUSED BY PACKING: HOLES FROM NAILS

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Titian	The Holy Family with a Shepherd	NG 4	c. 1510	106.4 x 143 cm	oil on canvas	plain weave canvas	the canvas was prepared with gesso and then an imprimitura that consists of lead white bound in oil (identified as heat-bodied linseed oil) with the addition of a little lamp black pigment of very small particle size	it was probably painted to be hung in a domestic setting, perhaps a grand Venetian palace, as was <i>The Flight into Egypt</i>	Holwell Carr Bequest, 1831	we can observe traces that Ashok Roy describes as holes from nails removed for transport (Fig. 79). The nails fixing the canvas to the frame were removed in order to detach the painting from its stretcher and allow the rolling-up procedure. The holes are, therefore, connected to a packing practice (perhaps for transport to Rome, where it is recorded in the Borghese inventory of 1693).

DAMAGE OCCURRED IN TRANSIT										
Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL PAINTING SUPPORT	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Workshop of Titian	Venus and Adonis	NG 34	c.1554	177.9 x 188.9 cm	oil on canvas	medium to heavy twill canvas, woven in a diagonal pattern (same of Vendramin Family) wax-lined on to a tabby-weave canvas of medium weight	gesso ground, but there is no overall imprimatura	maybe this painting was a "studio model" for other paintings of the same subject, and must therefore date to around 1554	<ul style="list-style-type: none"> - first recorded in the collection of Duke Jacopo Salviati in Palazzo Lugnara in Rome - it passed into Colonna collection in 1718 - sold in 1798 to a certain Giovanni de' Rossi - acquired soon afterwards by Alexander Day - sold in 1801 to Angerstein - Angerstein's collection was acquired as the foundation of the National Gallery in 1824. 	The painting presents accidental damage: when it was transported to Bangor in August 1939 at the outbreak of the Second World War, an accidental gash was made in the paint on Adonis' foot. Between 1939 and March 1940 this damage was patched from behind, filled and retouched. there is no visual information regarding the damage that occurred in 1939
Venetian painter	Portrait of a Bearded Cardinal	NG 2147	c. 1580	68.4 x 53.9 cm	oil on canvas	tabby-weave canvas, wax-lined on to another tabby-weave canvas the original painted area must have been larger there is no evidence of cusping at the edges the pine stretcher, probably Venetian, has corner keys for tightening the canvas, which are secured to the frame with glued linen strips	double ground of thin gesso which is covered with a dark ground of black charcoal and brown earth	The sitter is not identified	<ul style="list-style-type: none"> - purchased in Venice in 1855 from Barone Galvagna, who had certainly owned it seven years previously, and had probably acquired it early in the nineteenth century (there is a large vermillion seal affixed by the Accademia di Belle Arti in Venice, to authorise export) - Sent from London to Dublin on loan to the National Gallery of Ireland in February 1857. Returned to London in March 1926. 	on the right side of the canvas, passing just to the right of the sitter's eye, there is a large vertical line of loss which is connected to one that is smaller and more or less horizontal . The character of this loss is consistent with careless folding of the canvas , causing the brittle gesso and paint layers to break. The survival of small islands of paint within the areas of loss suggests that the canvas itself was not torn. The fold that damaged the canvas appears to more likely be the result of an accident, and certainly not due to a careful packing procedure . This is mainly deduced from the irregular position and shape of the fold (figs. 80-84)

UNCLEAR DAMAGE RELATED TO PACKING AND TRANSPORT PROCEDURES

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Lambert Sustris	The Queen of Sheba before King Salomon	NG 3107	c. 1540-55	80 x 187.3 cm (the original canvas is slightly smaller than the dimensions given above)	oil on canvas	coarse and loose tabby weave lined with glue paste on to a medium-loose tabby-weave canvas	the painting has a chalk (calcium carbonate) ground, this is unusual in Italian paintings but other examples have been recorded (including Veronese's Adoration of the Kings) also unusual are the two priming layers applied on top of the chalk ground (first pinkish, second pale grey)	the shape and size suggest that it may have been made for a particular place, perhaps even to hang opposite another painting with a matching processional subject, probably as part of the decoration of furniture in a bedchamber, or for the underside of an organ case.	<ul style="list-style-type: none"> - bought by Henry Austen Layard when British ambassador in Madrid in 1872, from a dealer called Brachio - bequeathed by Layard to the National Gallery, where it arrived in 1916 	Analysing the conservation dossier of this painting, I found no significant material, but only two black and white photographs, but with nothing written on their verso. With only this material available, not much else can be said about transport damage, and a more in-depth study would be beneficial. As we have seen in the previous examples, in fact, the kinds of damage caused by rolling and by folding are very different from each other and are quite recognizable. The description given in the catalogue (numerous long, vertical but meandering and branched tears can be discerned, chiefly to the right of centre) makes me think more of damage that occurred during a rolling-up procedure.
Jacopo Tintoretto	Saint George and the Dragon	NG 16	c.1555	158.3 x 100.5 cm	oil on canvas	fine tabby-weave canvas (it has an average thread count of 18 per centimetre in the warp and 16 in the weft) it has been paste-lined on to a similar but heavier tabby-weave canvas cussing is apparent on all four edges, thus the original dimensions are unlikely to have differed significantly although the canvas is rectangular, the painting is arched, it must have been originally displayed in a frame with spandrels, as it has been since 1962. the two top corners were left unpainted, save for a thin coat of black pigment (later overpainted...the change was presumably made to adapt the painting as a gallery picture	the canvas has a thin gesso ground salient points of the canvas weave are exposed in several places, but in some areas the thinly gessoed ground was left untouched by the artist.	maybe made for a private domestic setting, like a private chapel in Venice	<ul style="list-style-type: none"> - property of Pietro Correr by 1648, - probably sold by the Correr family around 1762 - sold at Prestage's, London, in 1764 - apparently in the possession of Richard Westfall before 1821, sold by him between 1815 and 1821 - in possession of Revd W. Holwell Carr, by whom it was bequeathed to the NG in 1831 	no further treatment was recorded until 1940, when slight damage to the surface caused in transport to storage in North Wales at the beginning of the Second World War received attention and cleaning tests were carried out In my opinion, there are no visible traces of damage clearly associated with transport

UNCLEAR DAMAGE RELATED TO PACKING AND TRANSPORT PROCEDURES

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Paris Bordone	A Pair of Lovers	NG 637	c. 1555-60	139.1 x 122 cm	oil on canvas	the original canvas, of a fine tabby weave, consists of three pieces the canvas has been trimmed irregularly, maybe the painting has been slightly reduced on both sides	the ground consists of lead white, with no admixture no gesso ground (which is a departure from Venetian practice of the first half of the sixteenth century: further research may reveal that it is characteristic of Bordone's later work)	Paris Bordone may have painted this work during his stay in France in 1559	<ul style="list-style-type: none"> - probably in Venetian collections during the seventeenth-century - it is first recorded in the collection of Edmond Beaucousin in Paris (chiefly formed in 1840s) - the Beaucousin collection was purchased <i>en bloc</i> by Eastlake for the National Gallery on 1860 	<p>In the catalogue we read that, apart from a tear in the canvas (sewn up) and a large loss (maybe a hole) in the man's left thigh, "some of the damage in the top left hand portion of the painting occurred when it was in transit to Bangor in August 1939, at the outset of the Second World War.</p> <p>In order to better understand what could have happened during transport, I have inspected the conservation dossier which, however, contains black and white photos dating to before the restoration of 1985 (figs. 85-87). So we cannot find clear evidence of the damage referred to, unless it consists of the paint losses visible in fig. 28. In fig. 85 we see a rather important instance of damage, which looks like a tear in the canvas crossing the man's chest.</p>

UNCLEAR DAMAGE RELATED TO PACKING AND TRANSPORT PROCEDURES

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Titian	The Death of Actaeon	NG 6420	c. 1559-75	178.8 x 197.8 cm	oil on canvas	<p>canvas of a medium-weight twill weave</p> <p>past lined on to a similar type of canvas</p> <p>cupping is apparent at all four edges (no variation of the size)</p> <p>approximately at the centre of the canvas there is a vertical seam which can easily be discerned</p> <p>triangle of canvas of a heavier weave in the top right corner of the left-hand portion of canvas</p>	thin gesso ground, and then a dark imprimitura	<p>This is probably the picture Titian referred to in a letter of June 1559 to Philip II, in which he says he hopes to finish two paintings he has started, one of which is described as 'Actaeon mauled by his hounds'. In fact parts of the work may date from the mid-1560s, even if most of what we see probably dates from the early 1570s. Titian started The Death of Actaeon when he was in his seventies, was still working on it in his mid-eighties, and it is possible that it was in Titian's studio at the time of his death in 1576. It was never sent to Spain.</p>	<ul style="list-style-type: none"> - probably in Titian's studio at his death in 1576 - apparently with Bartolomeo della Nave by the mid-1630s, when purchased for the Marquess of Hamilton - Archduke Leopold William - Queen Christina of Sweden in Antwerp - in her collection in Palazzo Riario in Rome - Duc d'Orleans, Regent of France - Philippe Egalité - Édouard de Walkiers - Laborde Mereville - Jeremiah Harman - Duke of Bridgewater - Sir Abraham Hume - ... - ... - ... - acquired by National Gallery in 1972 	<p>The catalogue reads "the losses form lines which are slightly suggestive of creases caused by folding or rolling". These lines can be seen in the x-ray photograph of the painting (figs. 88 and 89). The catalogue also informs us that a vertical seam can be easily discerned at the centre of the canvas; in the conservation dossier I found a raking light photograph of which I offer a detail, useful for observing the seam that protrudes from the plane of the canvas (fig. 90).</p> <p>In light of these images, I notice the presence of vertical lines of damage only on the side of the central seam. In any case, these lines do not seem to me to be damage caused by folding, which is usually characterised by neater lines. It could be explained as the effect of a rough rolling-up that caused the thin gesso ground (and the dark imprimitura) of the painting to crack. Once again, in the catalogue, we can notice how fuzzy the distinction between rolling damage and folding damage can be.</p>

UNCLEAR DAMAGE RELATED TO PACKING AND TRANSPORT PROCEDURES

Painter	Title	Inventory Number	Date made	Measurements (of the stretcher)	Medium and support	ORIGINAL CANVAS	GROUND AND PRIMING	ORIGINAL DESTINATION	INFORMATION ABOUT TRANSPORT/HANDLING HISTORY	CONDITION: DAMAGE OF TRANSPORT
Paolo Veronese	The Adoration of the Kings	NG 268	1573	355.6 x 320 cm	oil on canvas	<p>tabby-weave, medium-weight canvas composed of three horizontally joined pieces, each measuring the standard width of just over a meter. The central piece is 119 cm wide, the other two would be the same, but for the turnover.</p> <p>the edges may have been trimmed a little, especially at the sides.</p>	white ground composed of calcium carbonate bound in glue, rather than the calcium sulphate (gesso, that is usual in Italian paintings). This composition is very unusual, perhaps the only reported example in an Italian painting of the sixteenth-century.	The painting was made for the parish church of S. Silvestro in the sestiere of San Polo.	<ul style="list-style-type: none"> - when removed from the wall of the church of St Silvestro in 1837 the painting was stored 'in a room within the precincts of the building'. - payment to Angelo Toffoli of Venice in 1855 (he was also paid £10 for expenses incurred in forwarding the painting from Paris to London, payment to carriers) - the painting was already on its way to Paris, but Mündler ensured that the picture should go on to London, and it arrived in London on 29 November 1855 	<p>The catalogue reads: "there are many losses along both sides of the canvas which are consistent with scuffing that would have occurred when the canvas was rolled or folded for storage. The surface is very abraded in many areas".</p> <p>The catalogue and the <i>Technical Bulletin</i> do not publish x-ray photographs, nor are there any in the conservation dossier. Probably in 1837 the painting was detached from its frame, and then rolled-up or folded. This is not said on the basis of observation, but simply hypothesized, given that the painting is of large format and would have been inconvenient to store in another way</p>
Jacopo Tintoretto	Portrait of Vincenzo Morosini	NG 4004	c. 1575-80	85.3 x 52.2 cm	oil on canvas	<p>medium to fine tabby weave, irregularly trimmed</p> <p>the back of the lining canvas has been sealed with beeswax</p>	gesso ground of irregular thickness, and very dark priming (perhaps from palette scrapings)	<p>the painting seems to have been the model for:</p> <ul style="list-style-type: none"> - portrait of Vincenzo Morosini in the Doge's Palace - the same in the altarpiece commissioned by Vincenzo for his chapel in San Giorgio Maggiore 	<ul style="list-style-type: none"> - the fact that it was imported in to the UK from Rome in 1922 does not necessarily mean that its previous history was exclusively in Italy. However, we may deduce that the painting was in north Italy in the 1830 because it seems to have been known to Francesco Hayez; - the painting was said by Agnew's, the vendors, to have been acquired in 1922 from 'Count Contini of Via Nomentana in Rome'. "Count Contini" was Alessandro Contini, one of the leading art dealers of the twentieth century (Contini Bonaccossi). The painting arrived in London in 1923 and it was acquired by The National Gallery on 14th October 1924. 	<p>The canvas presents "a large horizontal tear across the man's chest". It looks to me like a cut in the canvas support (which is of a medium/ fine tabby weave), then re-fixed to the frame with a nail and a paper clip, both visible in the x-ray. The damage is accompanied, in the lower right corner, by other smaller cuts. Also in this case the edges of the canvas seem to have been re-fixed to the support. I do not believe that these traces are due to a packing procedure, they are probably the result of an accident (fig.92)</p>



Fig. 1 - Display of boxes for artworks at Waddesdon Manor.



Fig. 2 - *Ligadore di Comun.*

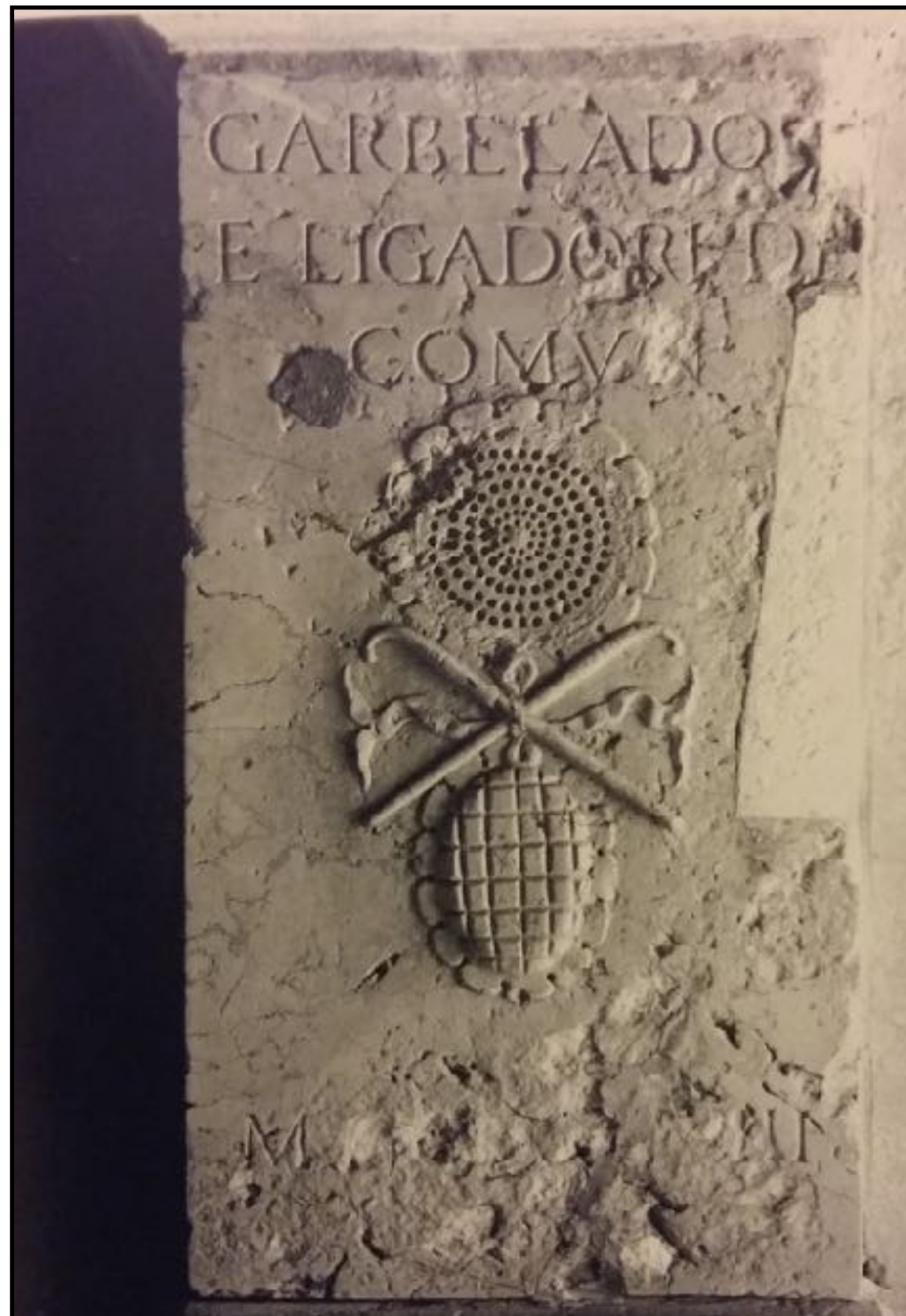
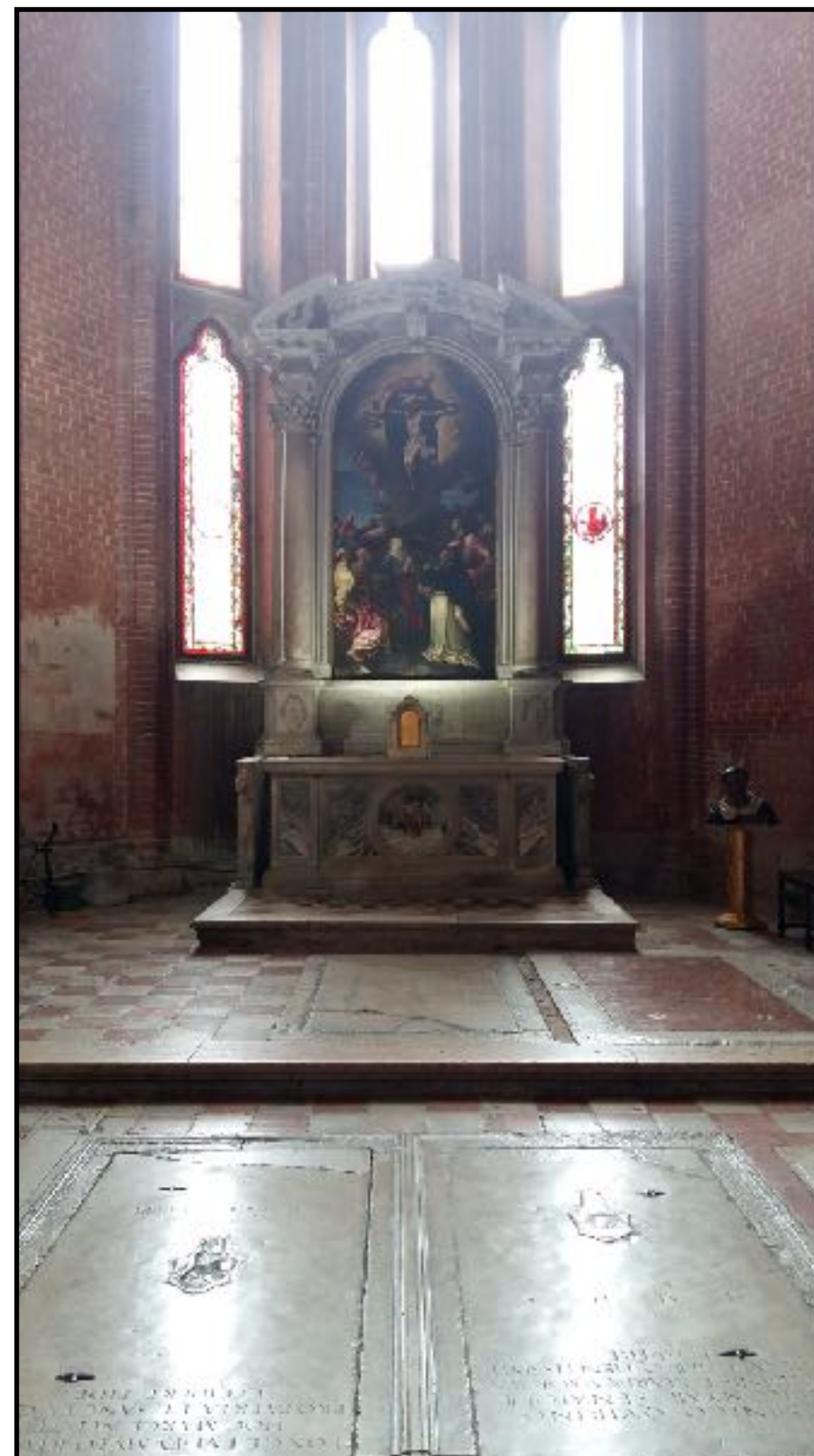


Fig. 3- Emblem of *Garbeladori and Ligadori de Comun*, Church of S. Giacomo of Rialto, Venice.



Figs. 4 and 5 - Chapel of *Ligadori del Fondaco dei Tedeschi*, Church of SS. Giovanni and Paolo, Venice.



Figs. 6 and 7 - Burial stone of *Ligadori del Fondaco dei Tedeschi*, church of SS. Giovanni and Paolo, Venice.

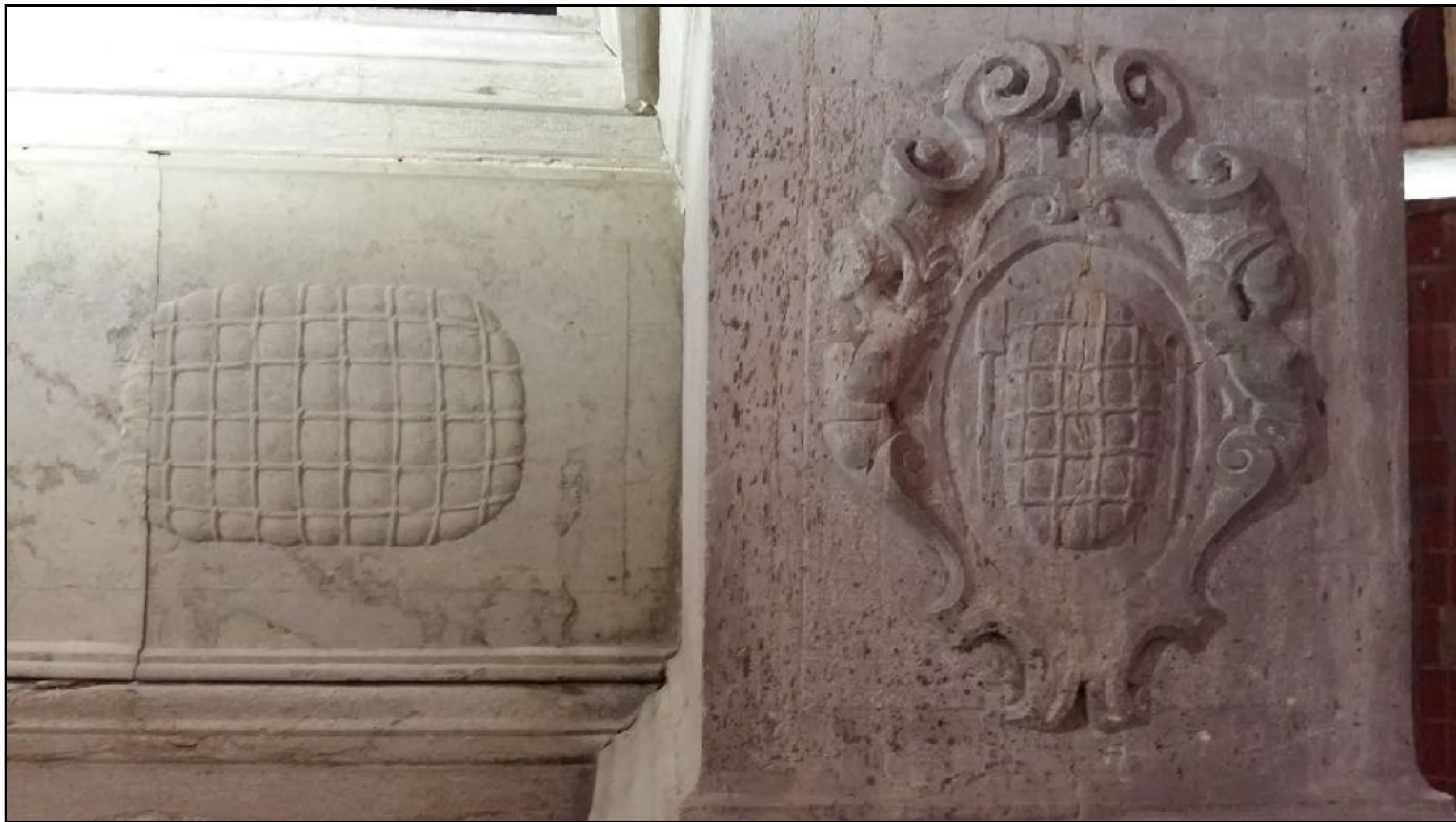


Fig. 8 - Emblems of *Ligadori del Fondaco dei Tedeschi*, church of SS. Giovanni and Paolo, Venice.

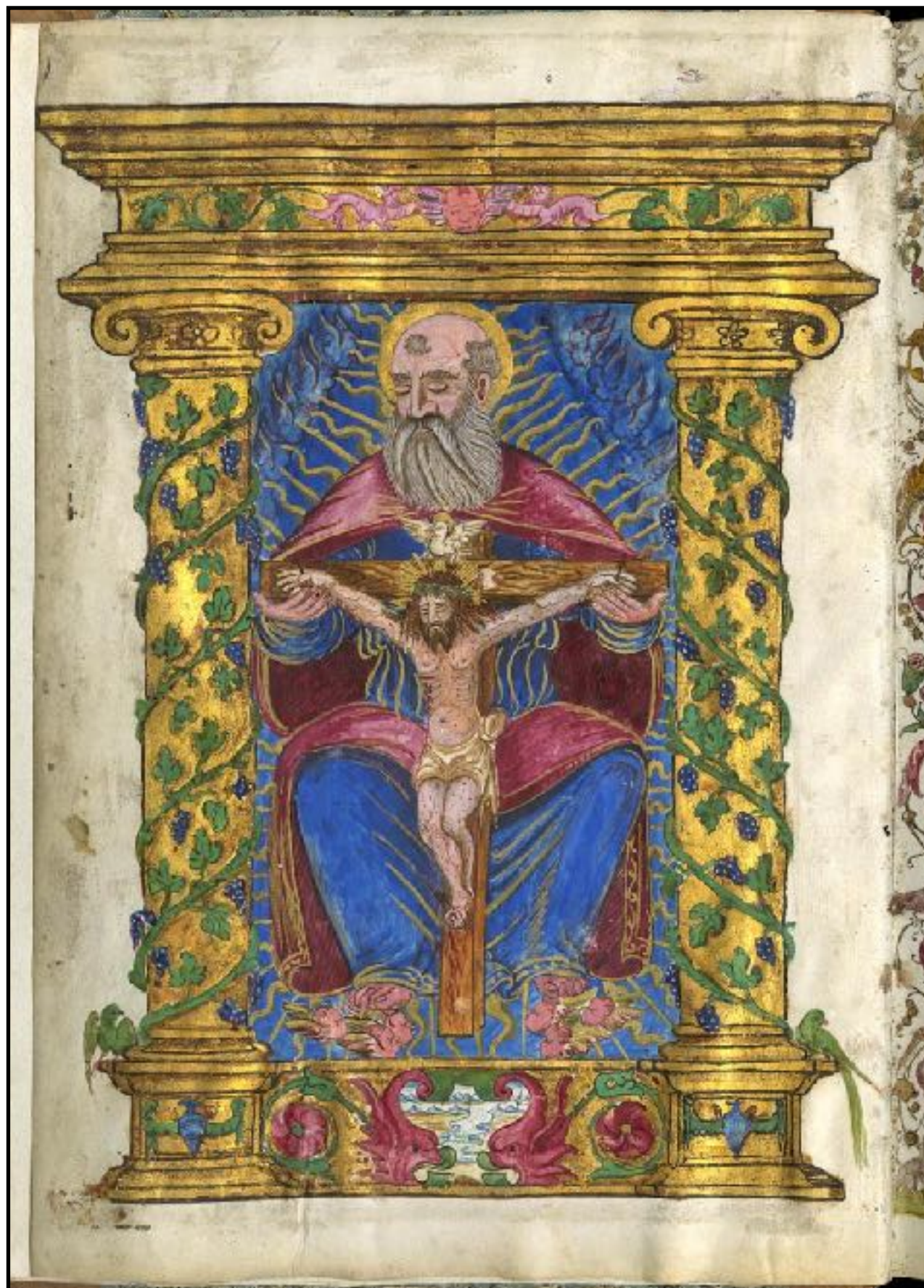


Fig. 9 - Statute of *Ligadori del Fontego dei Tedeschi*, BMC, Cl. IV, 85, f.1v.



Fig. 10 - Statute of *Ligadori del Fontego dei Tedeschi*, BMC, Cl. IV, 85, f.2r.



Fig. 11 - Statute of *Ligadori del Fontego dei Tedeschi*, BMC, Cl. IV, 85, f.2r (detail).



Fig. 12 - Statute of *Ligadori del Fontego dei Tedeschi*, BMC, Cl. IV, 85, f.2r (detail).



Fig. 13 - Statute of *Ligadori del Fontego dei Tedeschi*, BMC, Cl. IV, 85, f.2r (detail).

Questa e la limitatione cap. 37.
Per una balla de lire 2800.
 infina 3000. bauer si debia
 lire cinq esser. li. v. s. vi.
 Per una balla de li. 2000. li. 3. s. 10.
 Per mega balla che se intende de pe
 so lire 1500. li. ii. s. 10.
 Per una balla de li. 1200. li. ii. s. 6.
 Per una soma de penerchi. i. s. 4.
 Per una soma de bobasoli. i. s. 12.
 Per una soma de comini. li. i. s. 12.
 Per una bota de sanon ouer de fe
 gnane de li. 1000. li. o. s. 12.
 Per una bota de fige ouero de una
 passa de li. 1000. li. o. s. 14.
 Per de cano e tegnamo fige e
 una passa soma una. li. i. s. 4.
 Per una bota d'infusa ligada in
 fuore e chancuaga. li. 3. s. 12.
 Per una bota de un ligada con
 sacco de goton in tornelire. 2. s. 10.

per me.

Per mega bota ligada in fuore
 e chancuaga. li. o. s. 16.
 Per una barile de poluere de su
 charo: e per una cassa de cancella
 costr a torno la chancuaga li. o. s. ii.
 Per Cadanna bolesta ouer some
 che non sono notade notade qui
 finto e sia de che marchadantia si
 uola habia secondo el peso e come
 se troneza el lanorier essere.

Datti acordi e convention fatte fra
 i Reuerendi Signori frati de s.
 euane e paulo e la Fraterna ouer
 compagnia nostra de un ligado
 ri del fontego di tedeschi per il
 nostro officiare.

cap. xxxvii.
In lebristi nomine amen: Nel
 ano de la nativita de quello
 mille quatrocento e disno
 ne in diction. xii. adi. iii del mese

Fig.14 - Price list of *Ligadori* of the *Fontego dei Tedeschi* (dated 1 March 1424),
 BMC, Cl. IV, 85, ff. 16v, 17r.

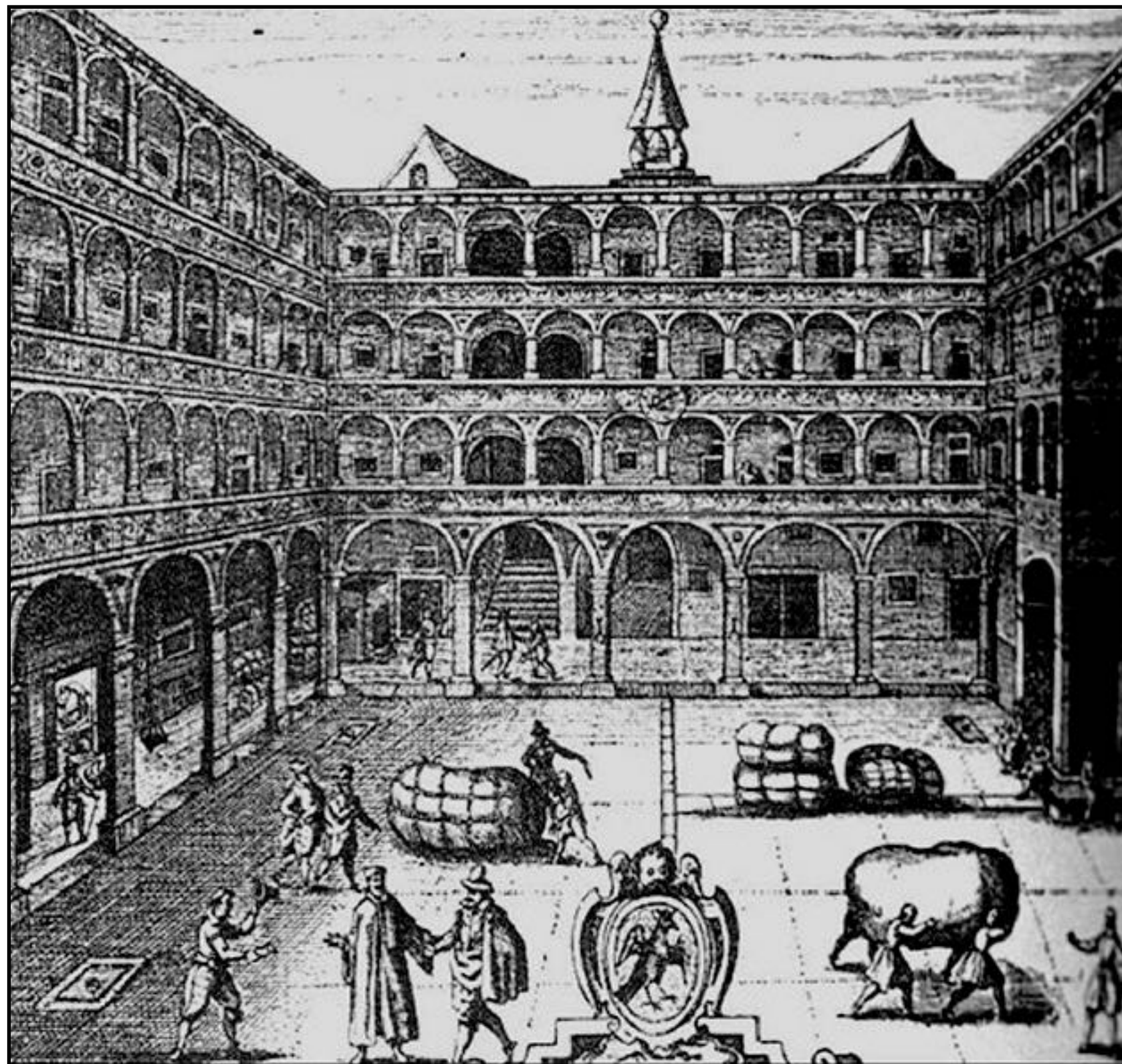
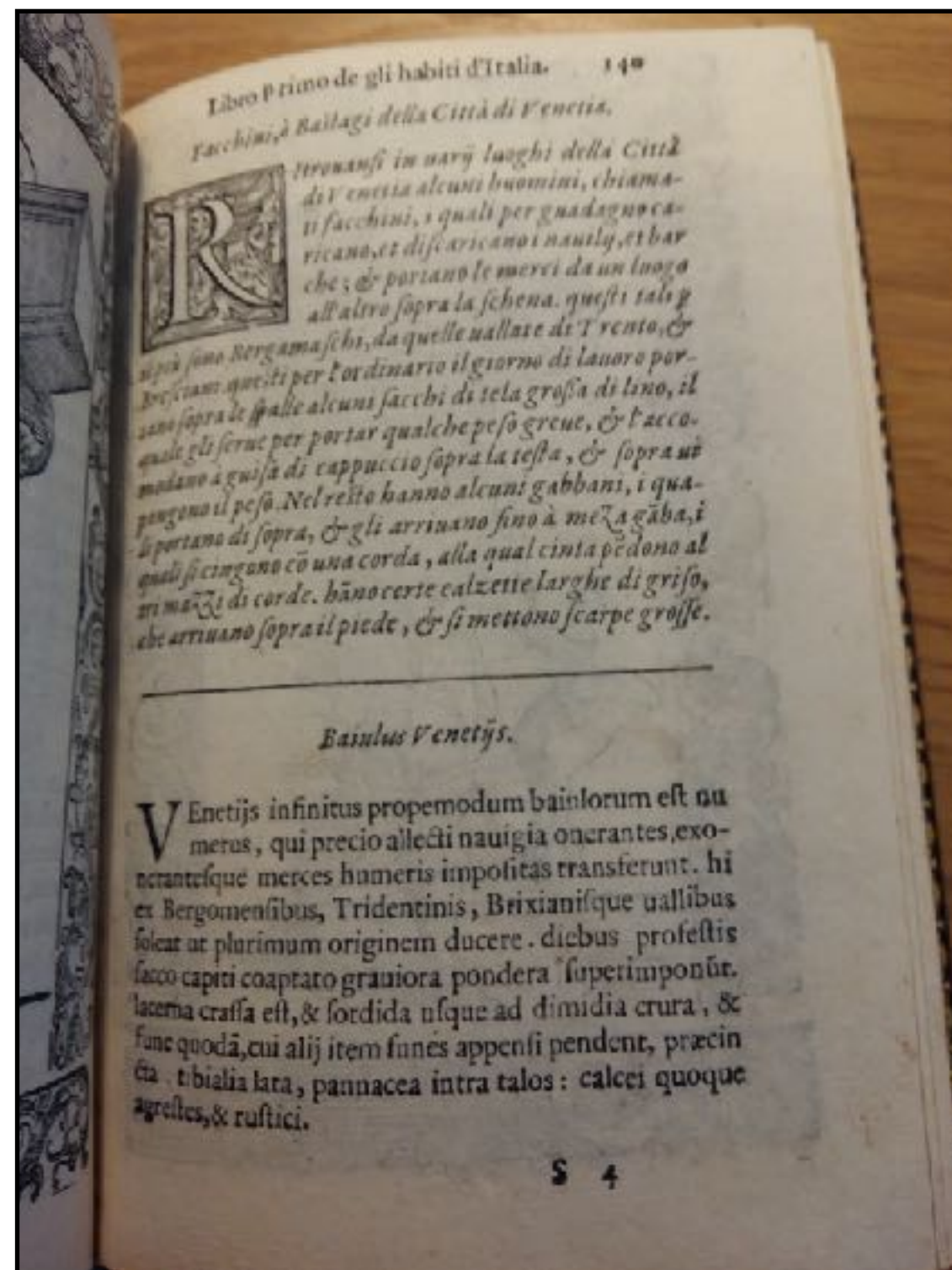


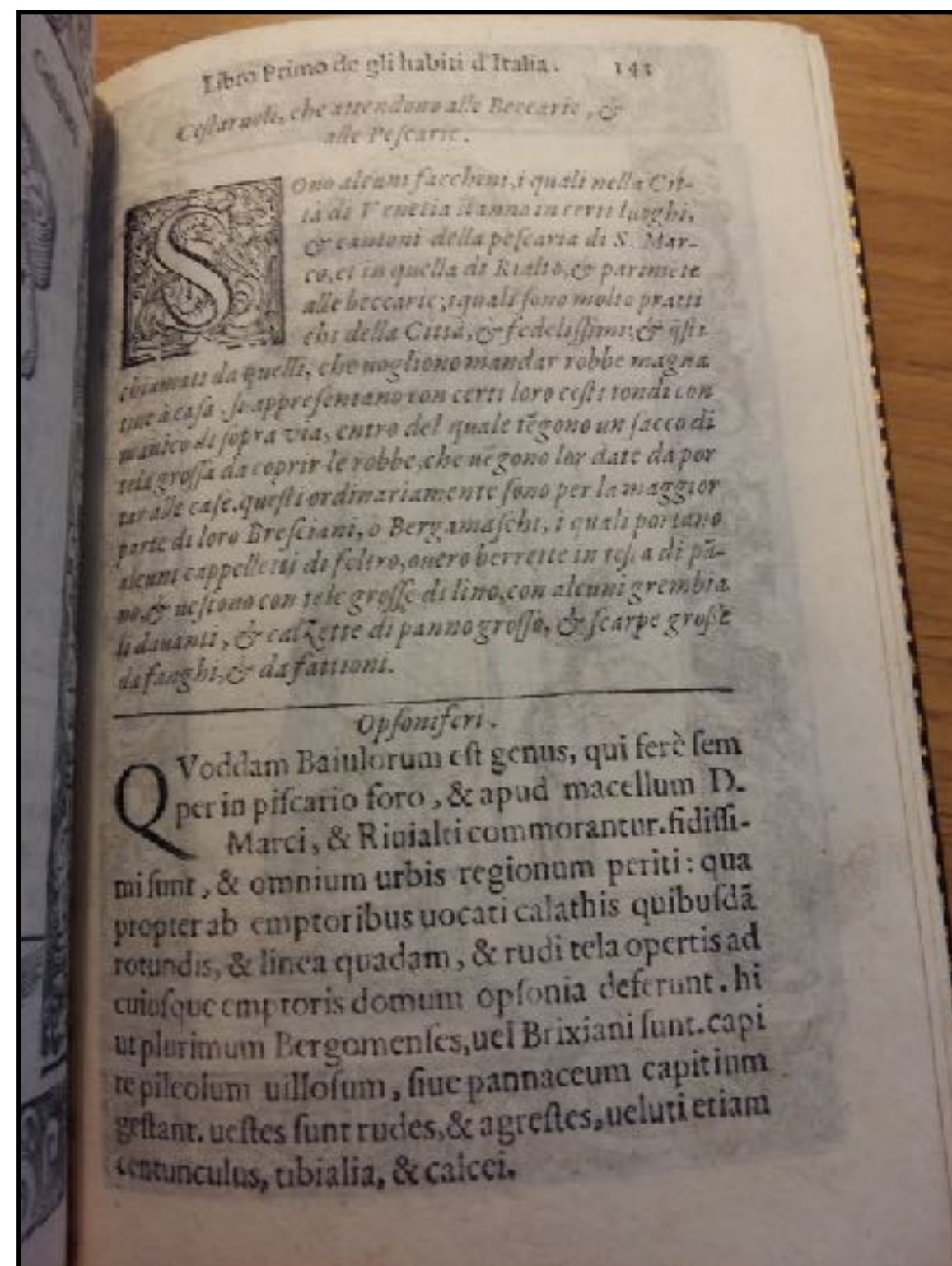
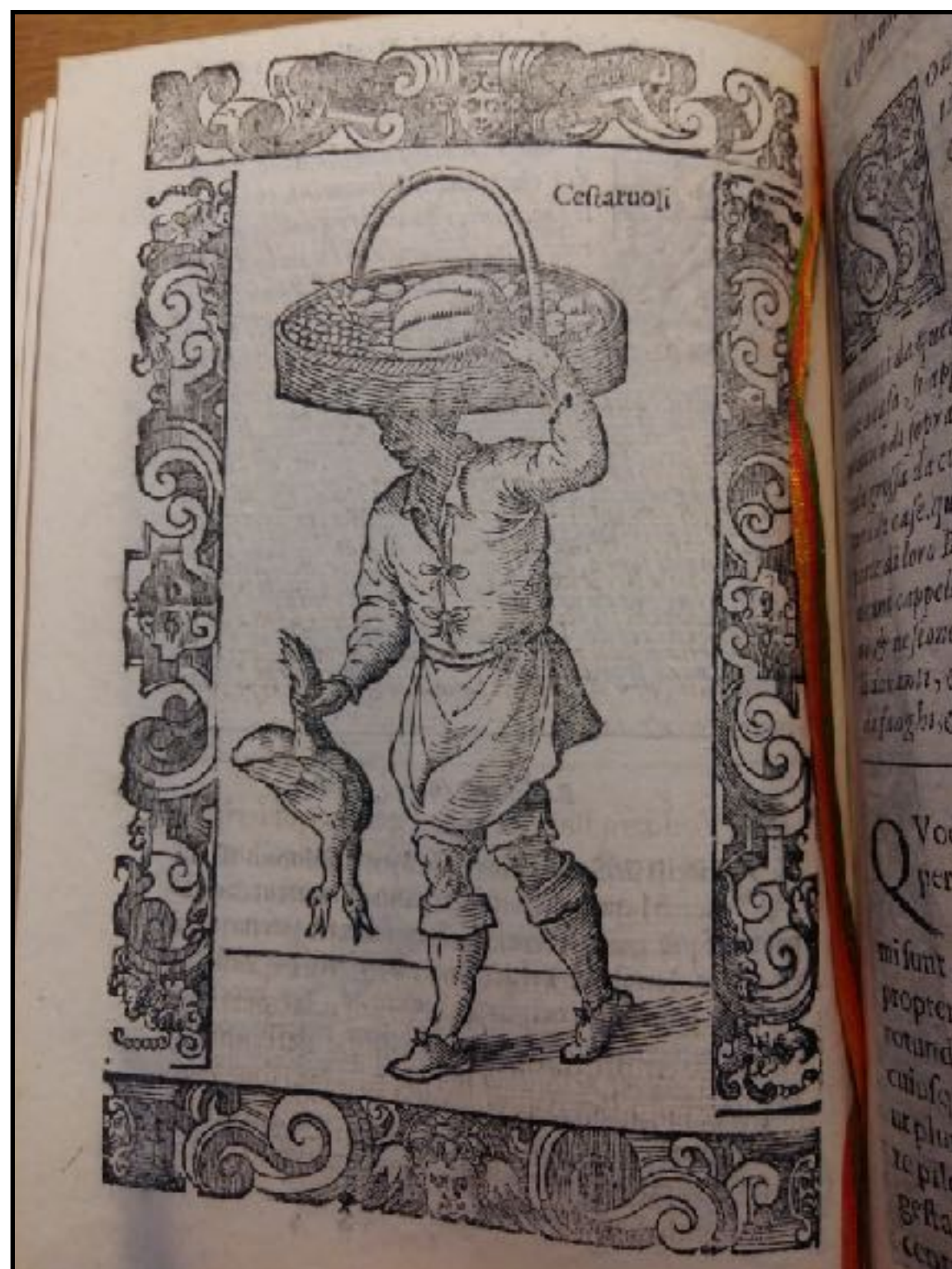
Fig. 15 - *Facchini del Fontego dei Tedeschi*, engraving by Raphael Custos, 1616.



Fig. 16 - Cesare Vecellio, 1590, *Facchino*, from *Habiti Antichi, et Moderni di tutto il Mondo*.



Figs. 17 and 18 - Cesare Vecellio, 1590, *Facchini*, from *Habiti Antichi, et Moderni di tutto il Mondo* f. 141.



Figs. 19 and 20 - Cesare Vecellio, 1590, *Cestaruoli*, from *Habiti Antichi, et Moderni di tutto il Mondo* f. 140.



Fig. 21 - *Statute of Carboneri*, BMC, Cl. IV, 184, 1r.



Fig. 22 - Emblem of *Carboneri*, MC. Cl. I, 2122.



Fig. 23 - *Portadore de Carbon.*



Fig. 24 - Emblem of *Carboneri*, MC. Cl. I, 2122 (detail).



Fig. 25 - Italian farmer with *gerla*.



Fig. 26 - Emblem of *Carboneri*,
MC. Cl. I, 2122 (detail).

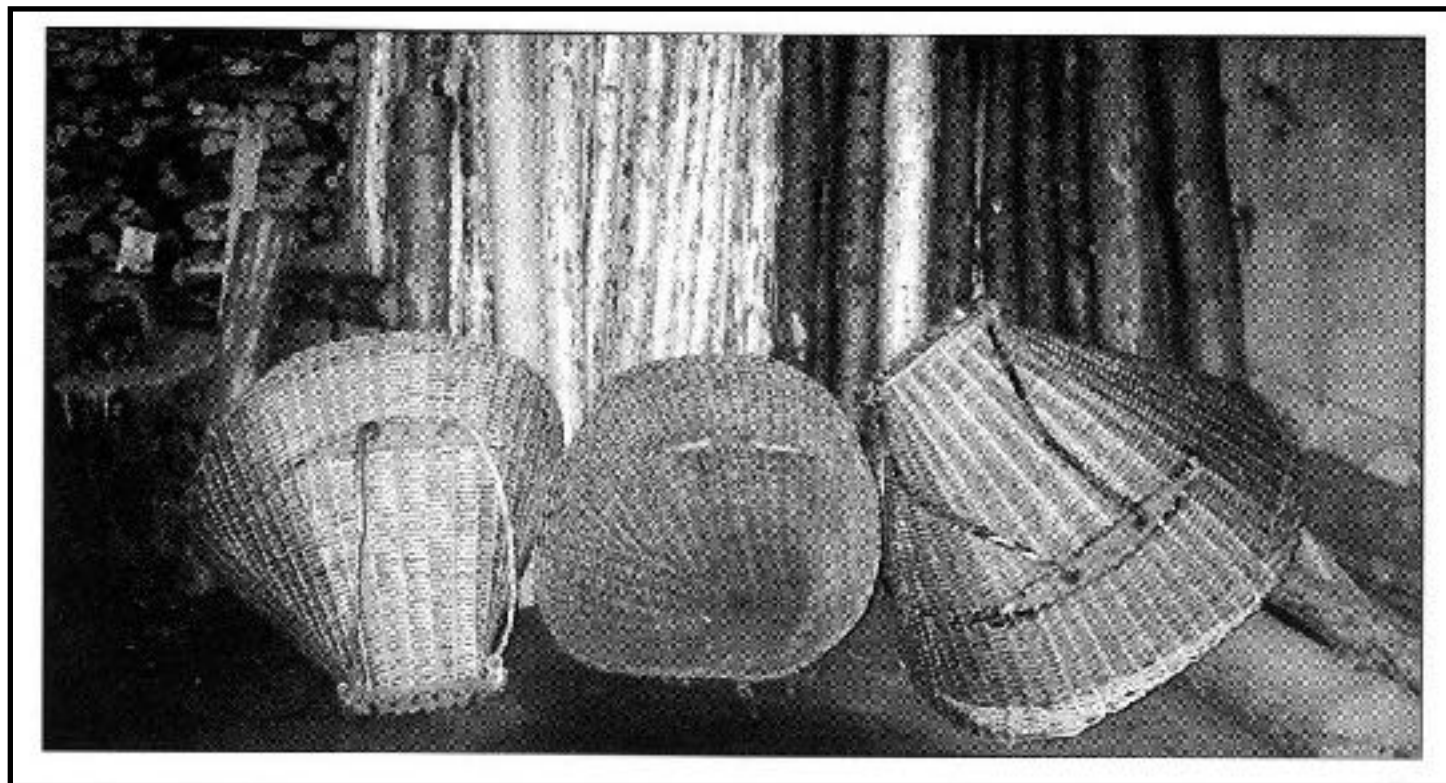


Fig. 27 - *Gèrli de avimen*.



Figs. 28, 29, 30, 31 - Italian farmers with *gerla*.



Fig. 32 - *Paysan*, drawing attributed to Jacopo Bellini, Musée du Louvre.



Fig. 33 - François Bunel II, 1590 ca., *The Confiscation of the Contents of a Painter's Studio*, Mauritshuis Museum, The Hague.



Fig. 34 - François Bunel II, 1590 ca.,
The Confiscation of the Contents of a Painter's Studio,
Mauritshuis Museum, The Hague (detail).

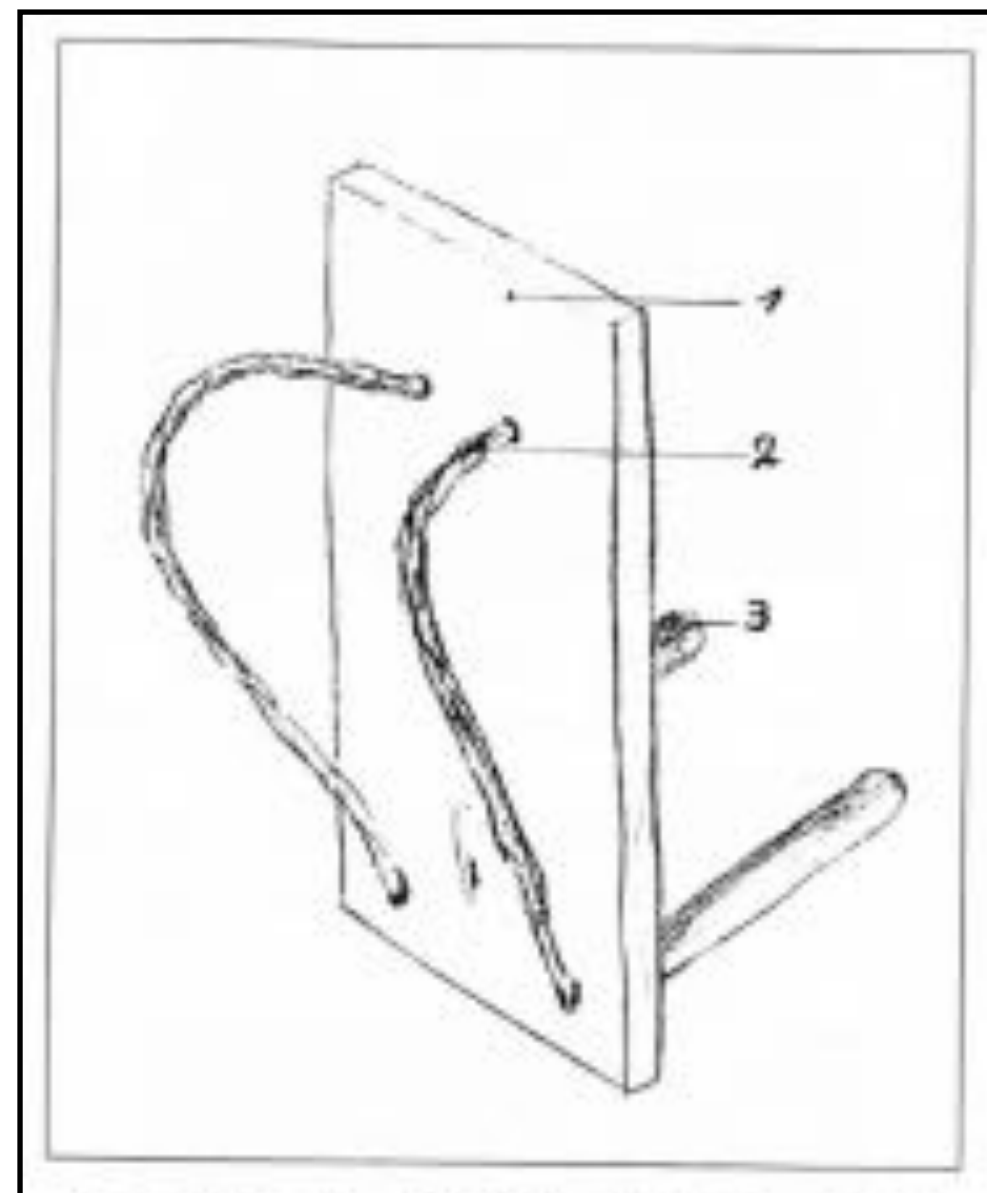


Fig. 35 - *Caddula*.



Fig. 36 - Canaletto, 1732, *Il Ponte dell'Arsenale*, Woburn Abbey, private collection.

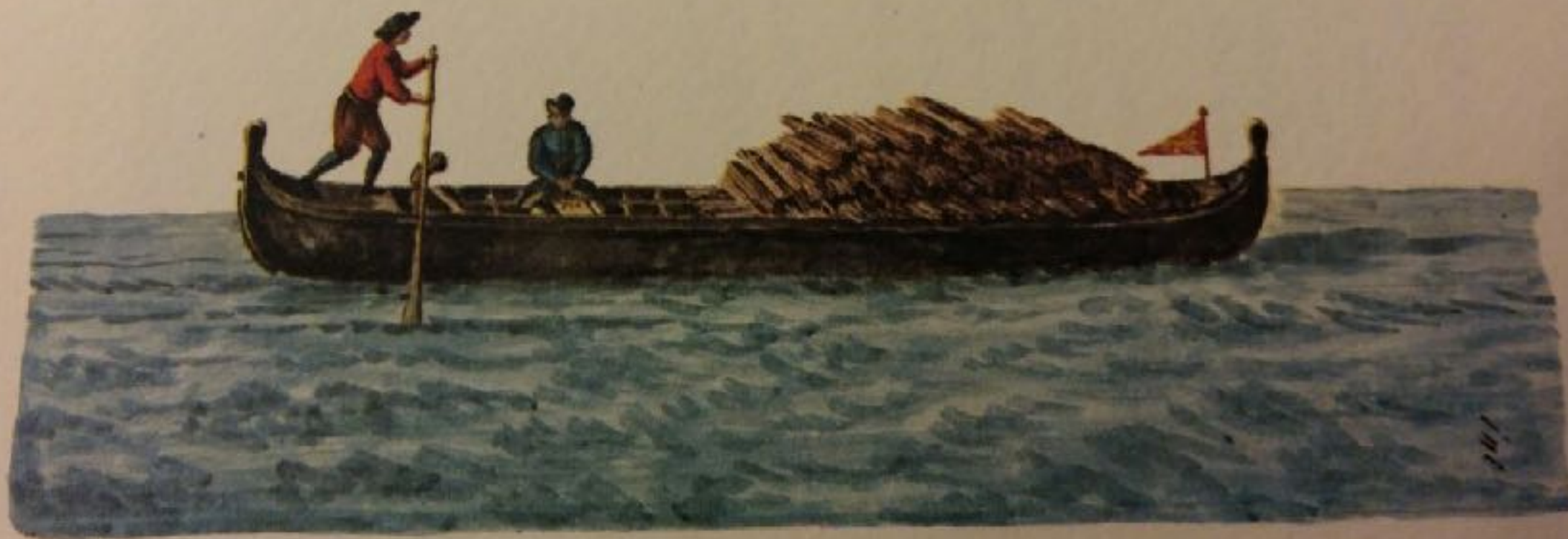


Fig. 37 - Venetian porters of timber.



Fig. 38 - Venetian porters of wine.



Fig. 39 - *Emblem of the Guild of Peateri*, (MC. Cl. I, 2049).



Fig. 40 - Cover of the Statute of Guild of Burchieri, BMC. Cl. IV, 198.



Fig. 41 - Cover of the Statute of Guild of Burchieri, BMC. Cl. IV, 198 (detail).

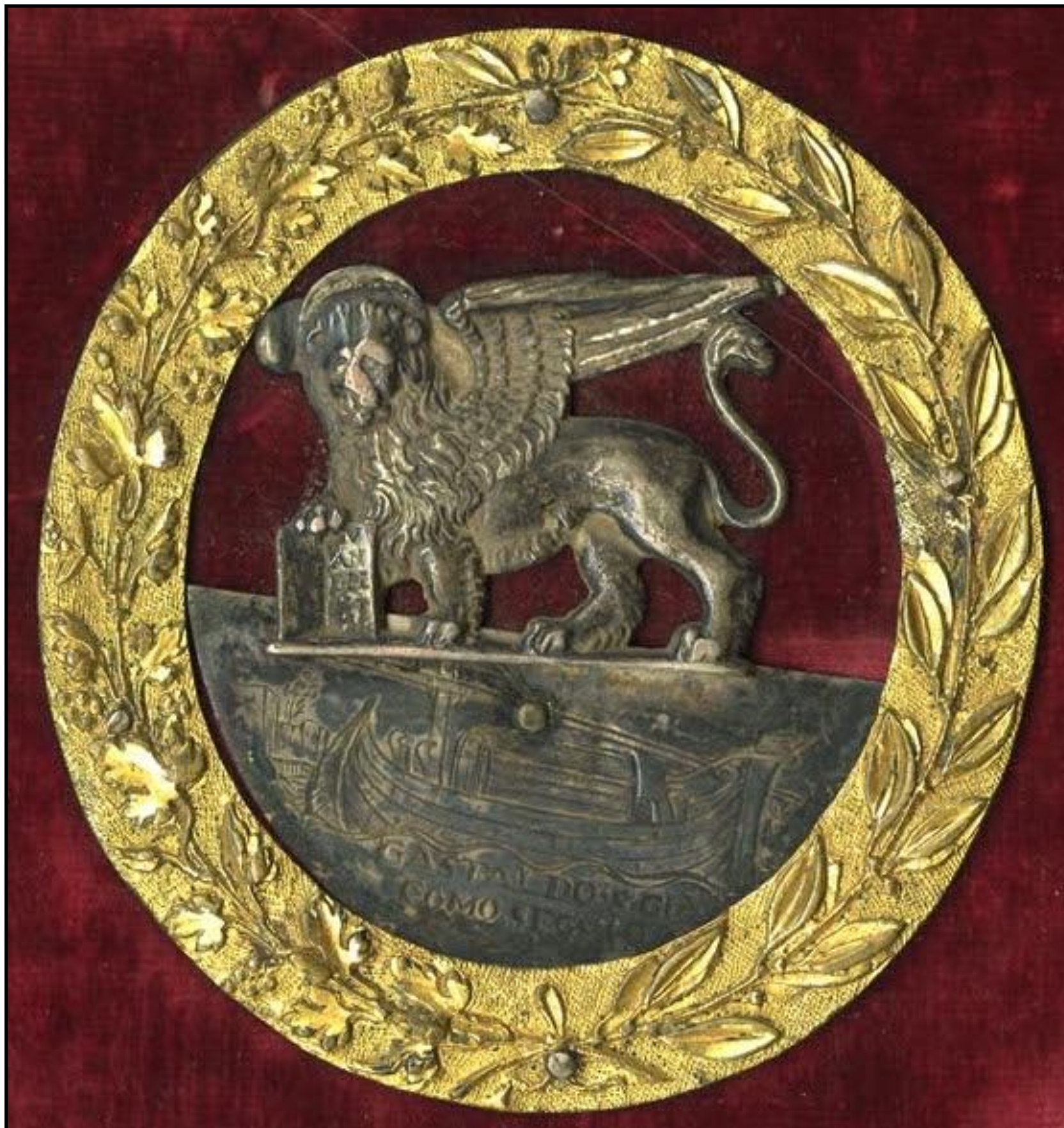


Fig. 42 - Cover of the Statute of Guild of Burchieri, BMC. Cl. IV, 198 (detail).

Tintoretto ships the Gonzaga Cycle to Mantua in 1579-1580

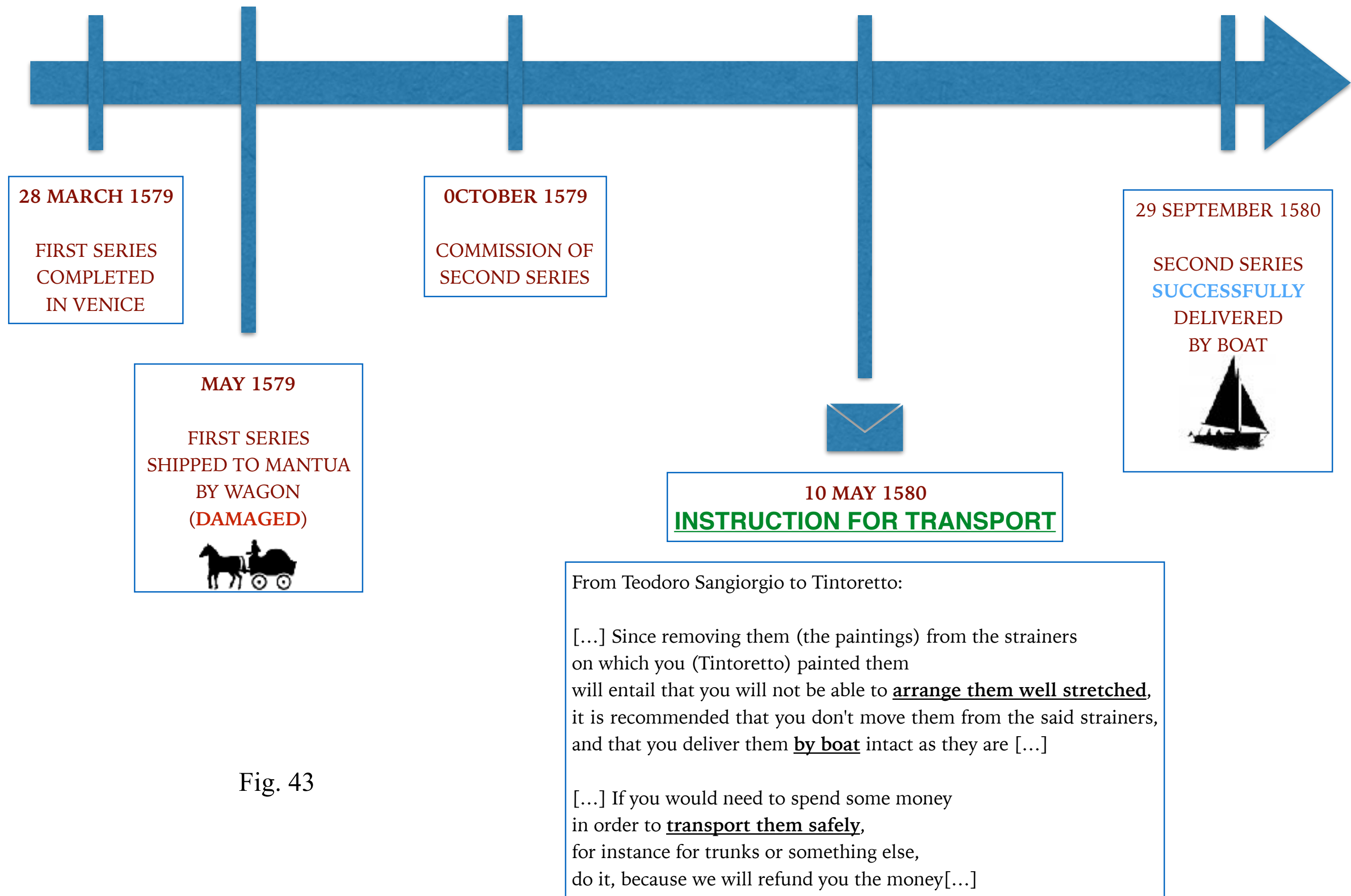


Fig. 43



Fig. 44 - Elevation of Gonzaga, X-ray (detail).

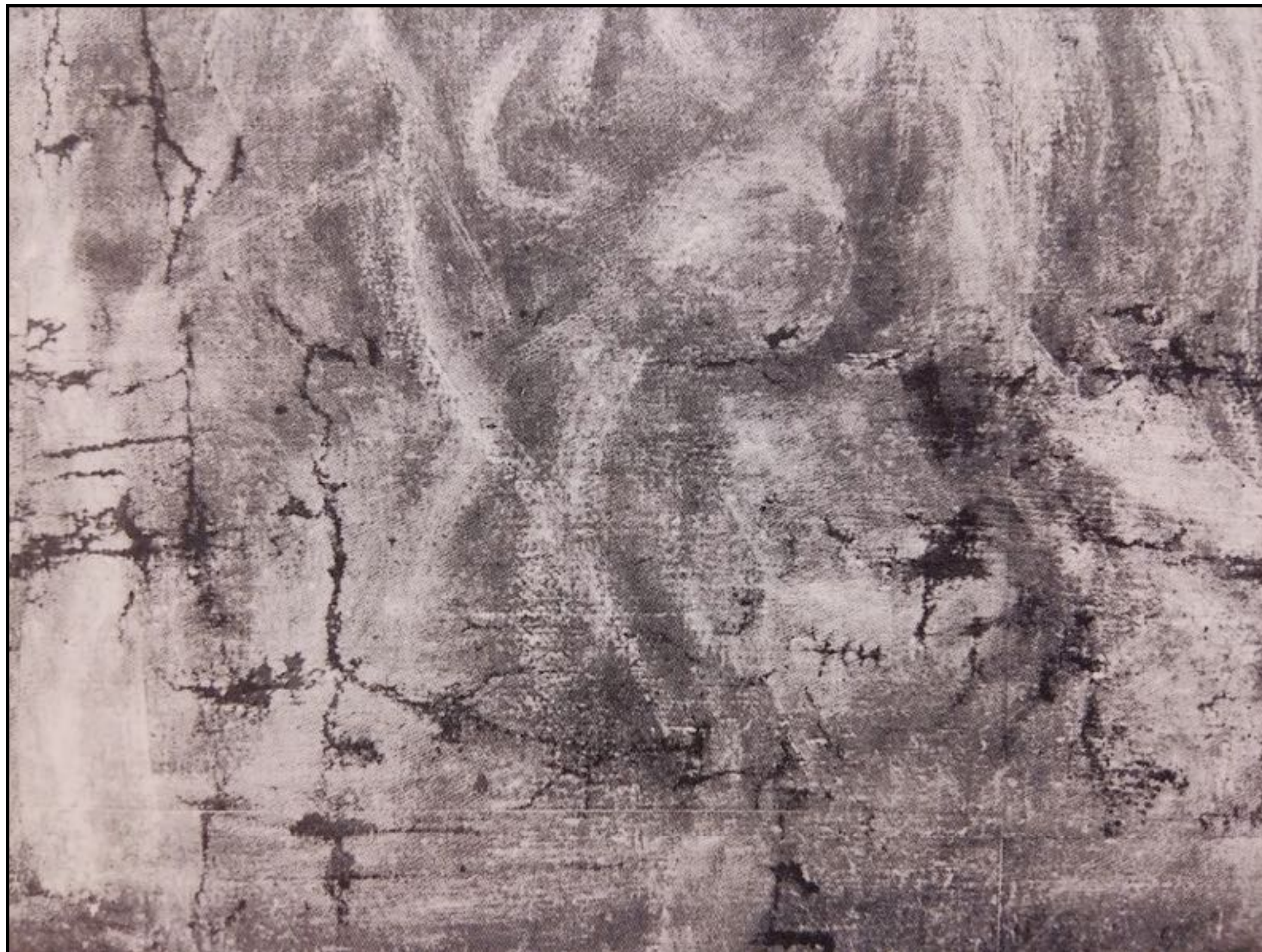


Fig. 45 - Elevation of Gonzaga, X-ray (detail).



Fig. 46 - Battle on the Taro, X-ray (detail).



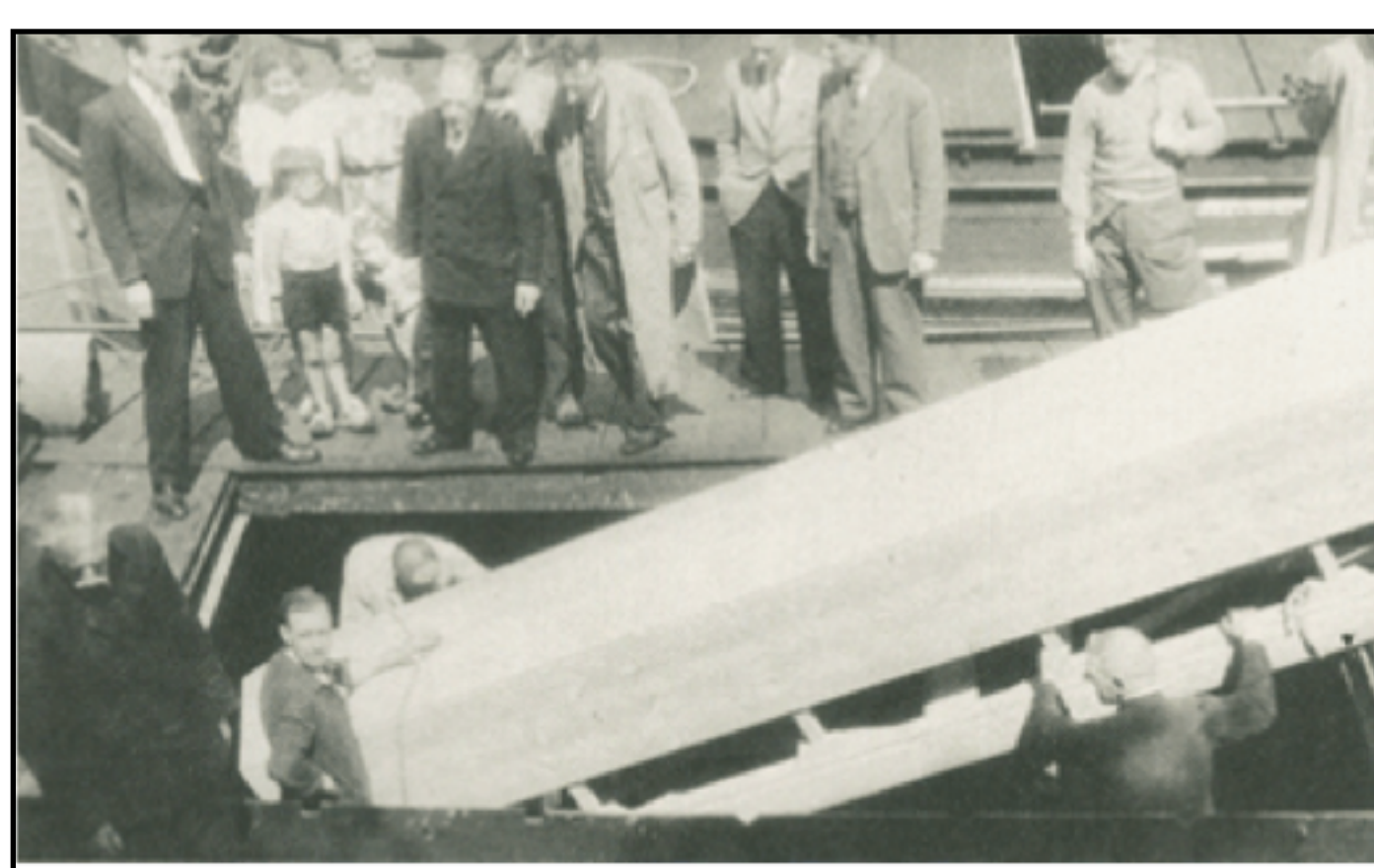
Fig. 47 and 48 - Taking of Parma, X-ray (detail).



Fig. 49 - The Evacuation of Paintings from London during the Second World War (National Gallery's Archive)



Fig. 50 - Rembrandt's *The Night Watch* rolled in 1939.



Figs. 51, 52 - Rembrandt's *The Night Watch* rolled in 1939.

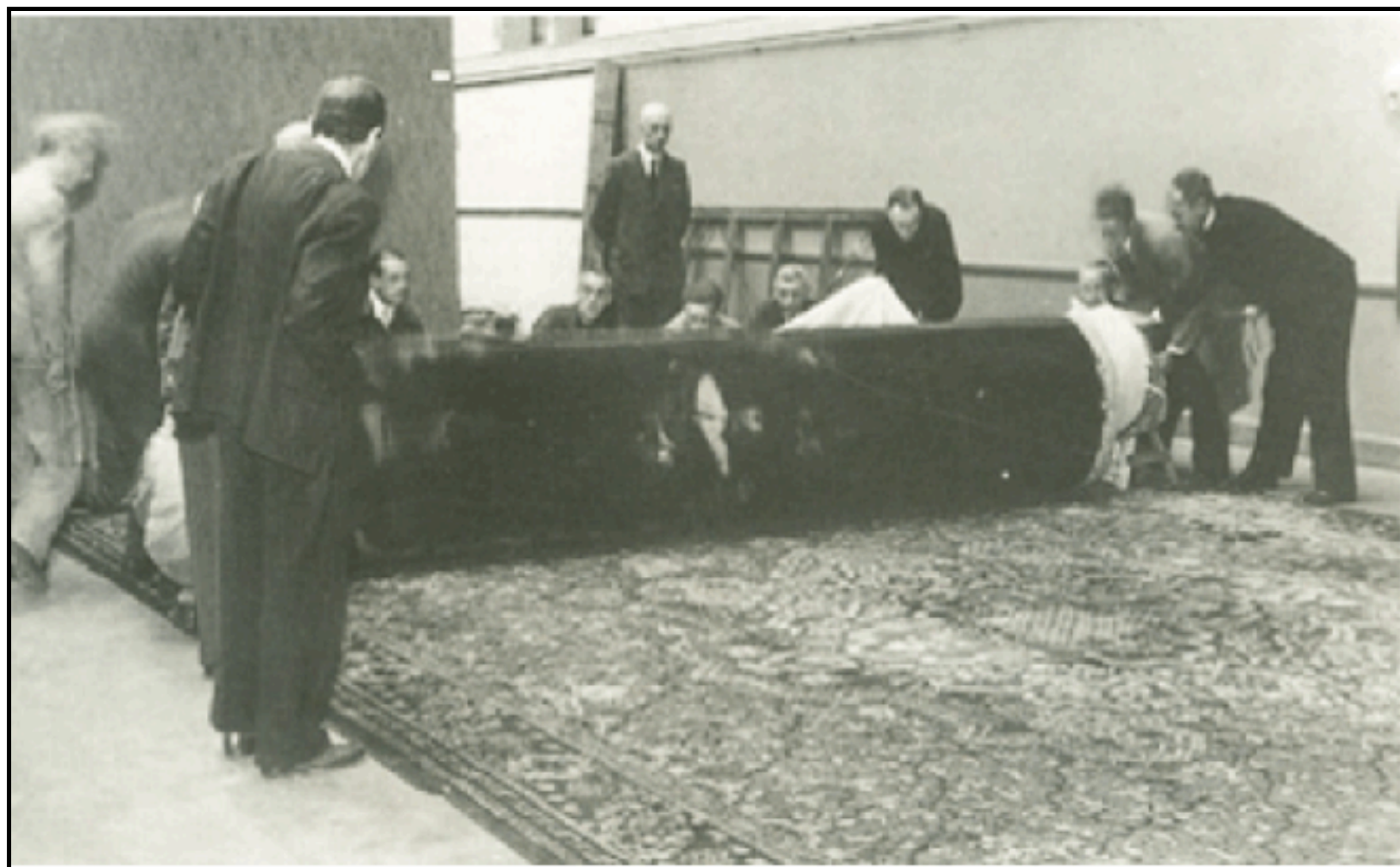




Fig. 53 - NG 35, x-ray of 1954 (detail).



Fig. 54 - NG 35, x-ray of 1962 (detail).



Fig. 55 - NG 35 after cleaning and before restoration on 7 February 1969.

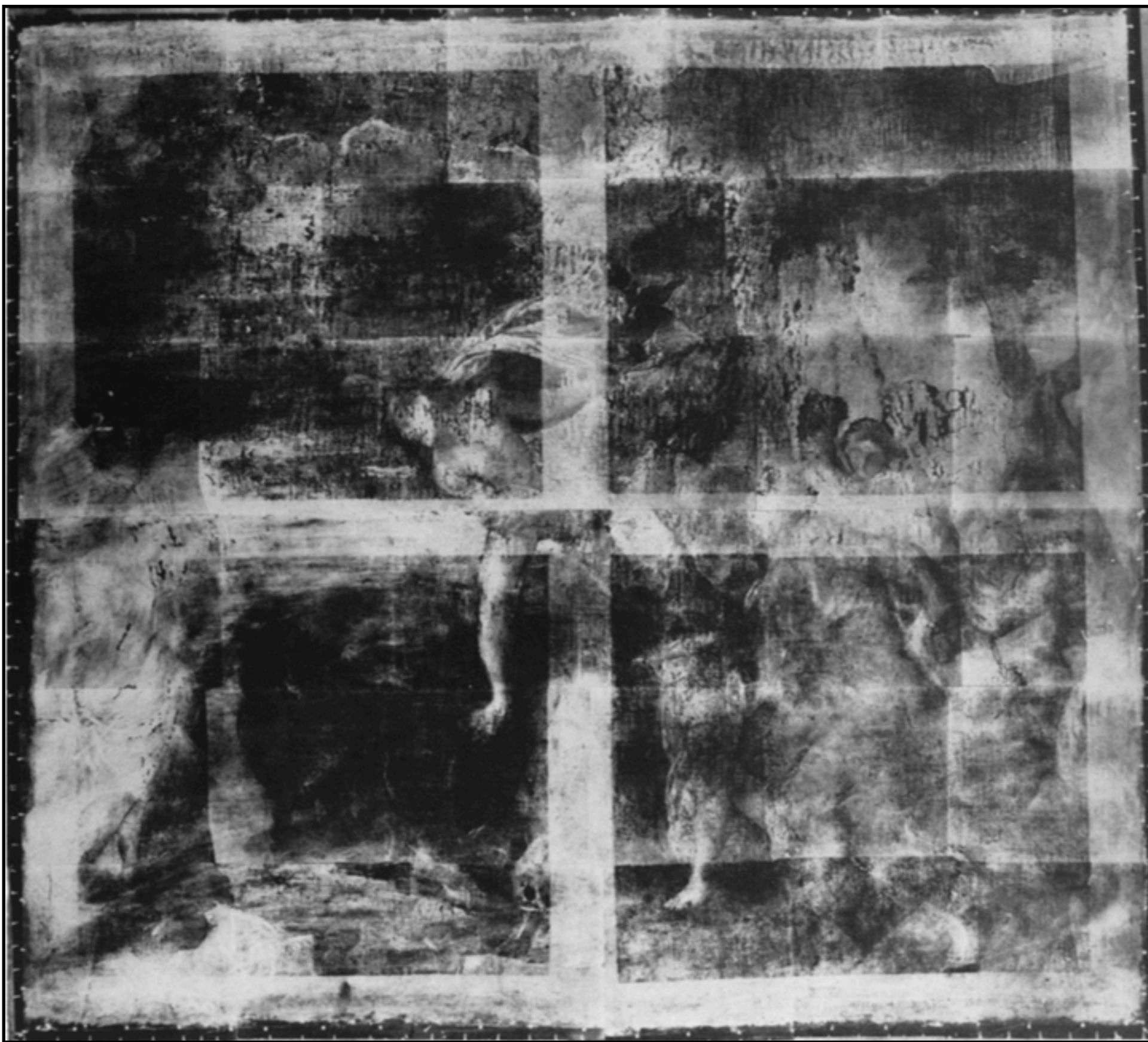


Fig. 56 - NG 35, x-ray mosaic before cleaning and restoration of 1967-69.



Figs. 57 and 58 - NG 35, x-ray of 1975 (details).



Fig. 59 - NG 5385, x-ray of 1959.



Fig. 60 - NG 5385, x-ray of 1959 (detail).



Fig. 61 - NG 5385, x-ray of 1959 (detail).



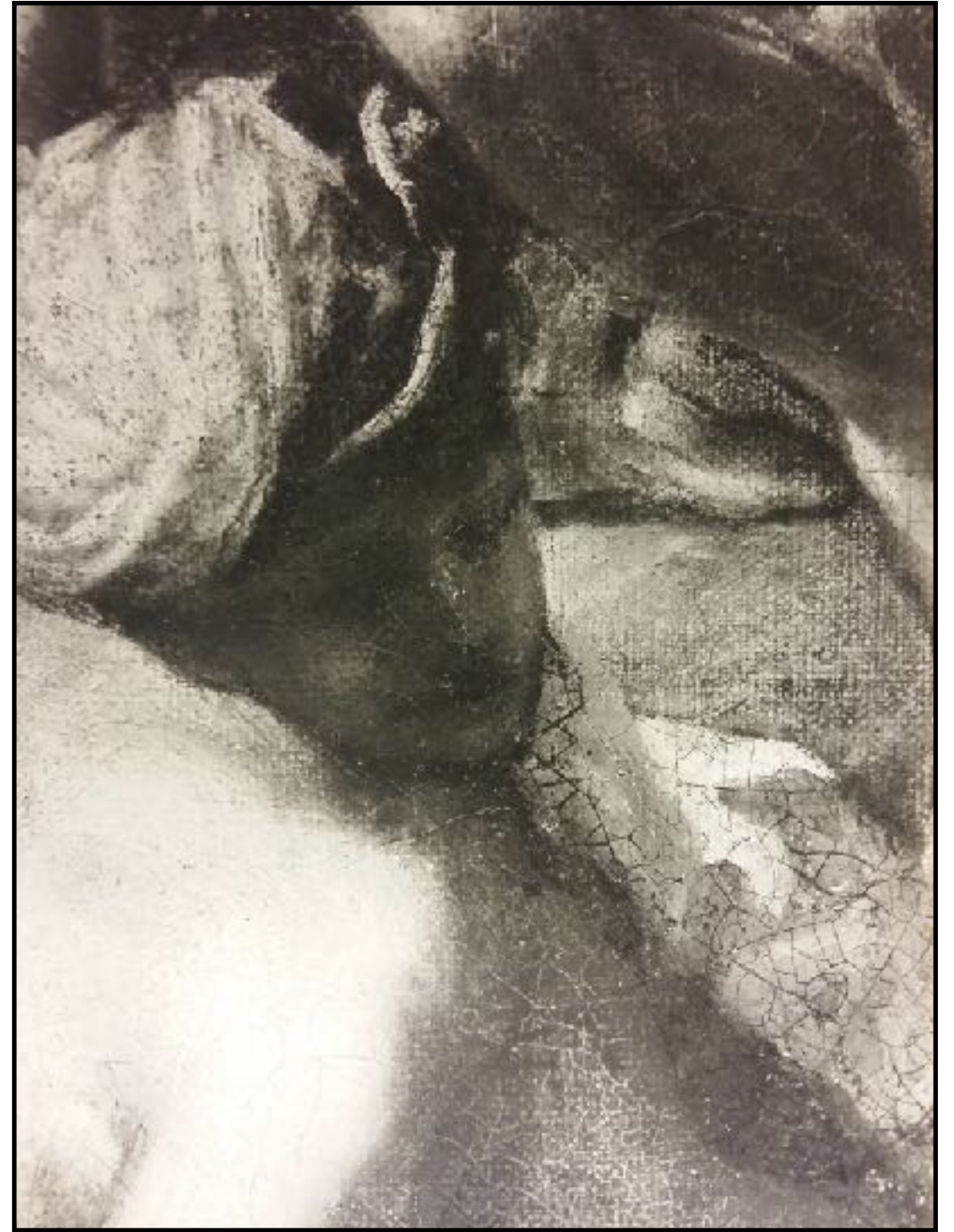
Figs. 62 and 63 - NG 3942, x-ray of 31 July 1959 (details).



Fig. 64 - NG 4222, x-ray of Alan B. dating to September 1927 (detail).



Fig. 65 - NG 4222, x-ray of Alan B. dating to September 1927 (detail).



Figs. 66 and 67 - NG 4222, x-ray of Alan B. dating to September 1927 (details).



Fig. 68 - NG 4256, x-ray mosaic composite of August 19th, 1983 (detail).



Fig. 69 - NG 4256, x-ray mosaic composite of September 12th, 1997 (detail).

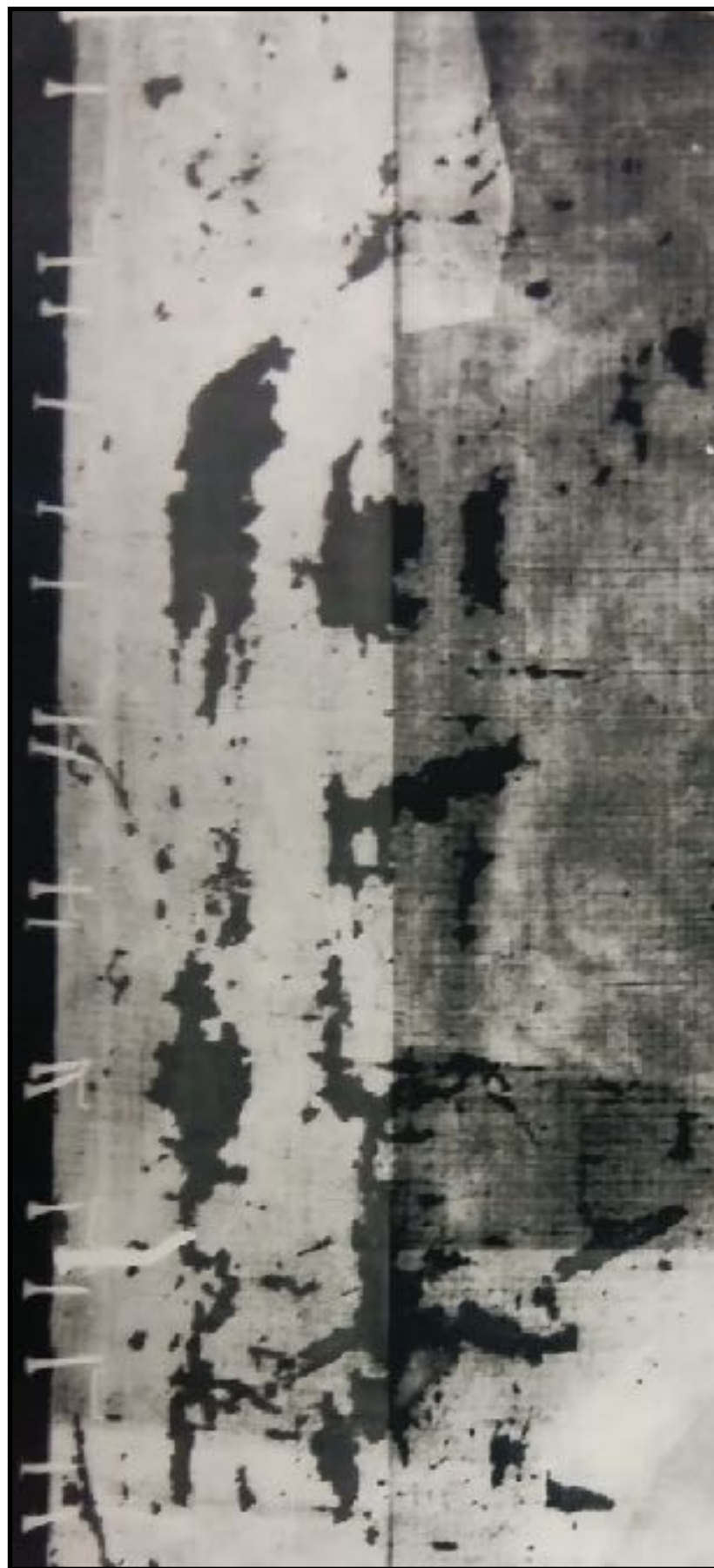


Fig. 70 - NG 4256, x-ray mosaic composite of September 12th, 1997 (detail).



Fig. 71 - NG 2281, Photograph after cleaning and before restoration of May 2nd, 1979 (detail).



Fig. 72 - NG 2281, Photograph after cleaning and before restoration of May 2nd, 1979 (detail).



Fig. 73 - NG 1313, infrared of October 10th, 1956 (detail).



Fig. 74 - NG 1313, infrared of October 10th, 1956 (detail).



Fig. 75 - NG 1130 in the Gallery viewed from left (National Gallery's archive).



Fig. 76 - NG 1130, infrared of May 10th, 1956.



Fig. 77 - NG 1858, infrared image (detail).



Fig. 78 - NG 1858, infrared image (detail).

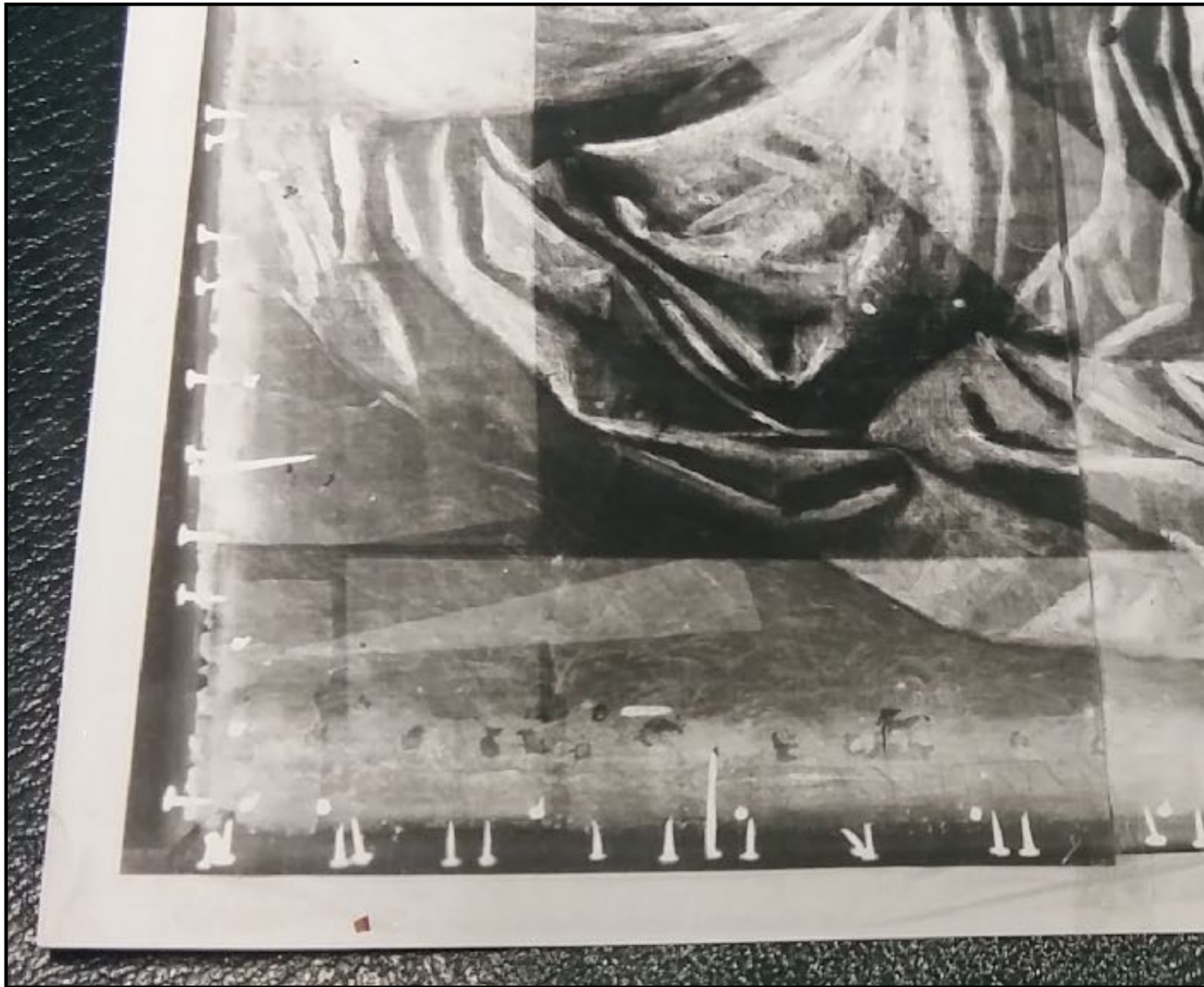


Fig. 79 - NG 4, x-ray mosaic composite of October 23rd, 1986 (detail).



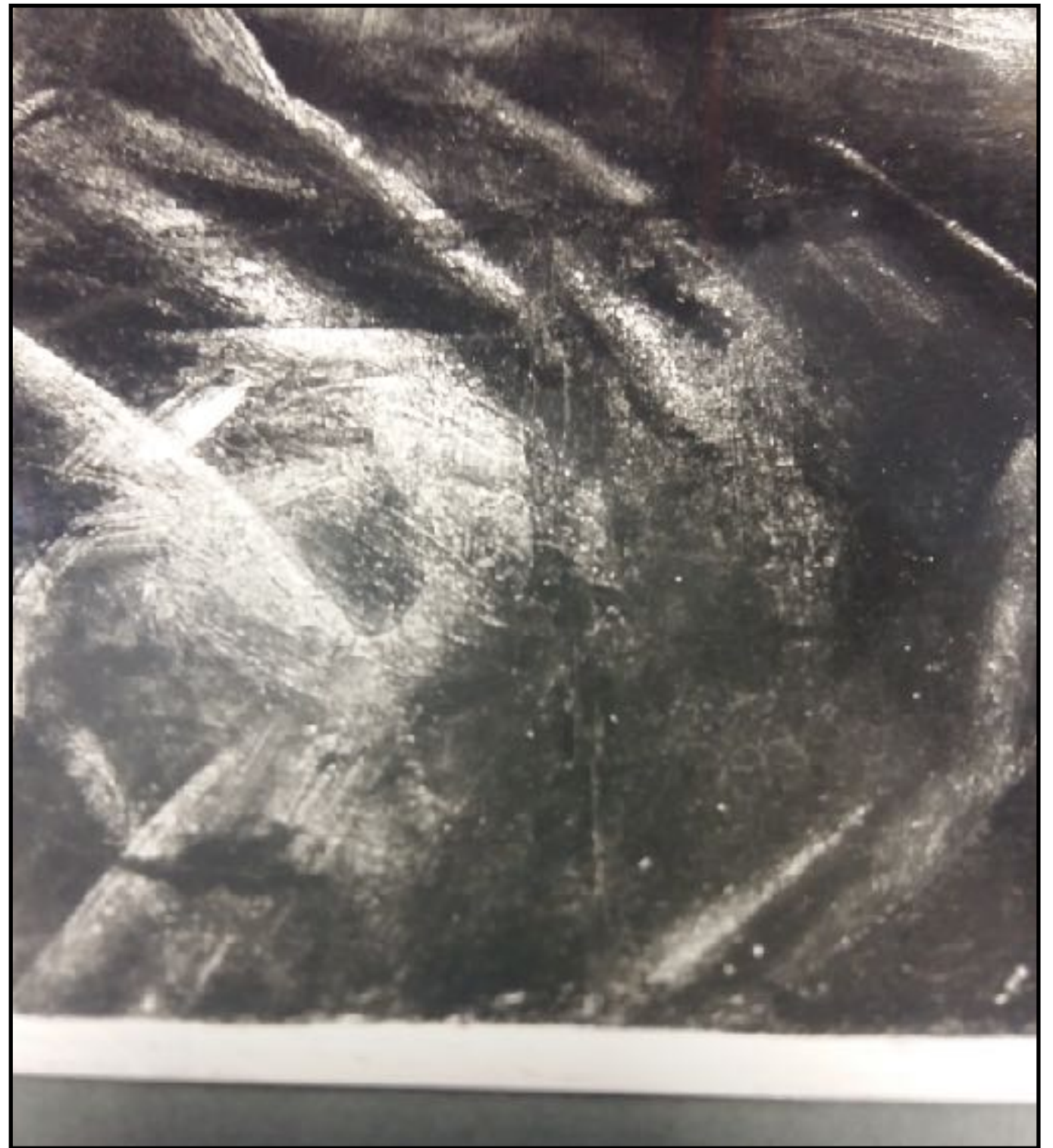
Fig. 80 - NG 2147, x-ray of March 1st, 1982 (detail).



Fig. 81 - NG 2147, x-ray of March 1st, 1982 (detail).



Fig. 82 - NG 2147, x-ray of March 1st, 1982 (detail).



Figs. 83 and 84 - NG 2147, infrared of February 9th, 1982 (details).



Fig. 85 - NG 637, photograph before restoration of 1985 (detail).



Fig. 86 - NG 637, photograph before restoration of 1985 (detail).



Fig. 87 - NG 637, photograph before restoration of 1985 (detail).



Fig. 88 - NG 6420, x-ray photograph (detail).



Fig. 89 - NG 6420, x-ray mosaic composite of June 21st, 1982 (detail).



Fig. 90 - NG 6420, Grazing light photograph of March 7th, 1951 before cleaning (detail).



Fig. 91 - NG 268, Photograph of the painting from below, September 2019.

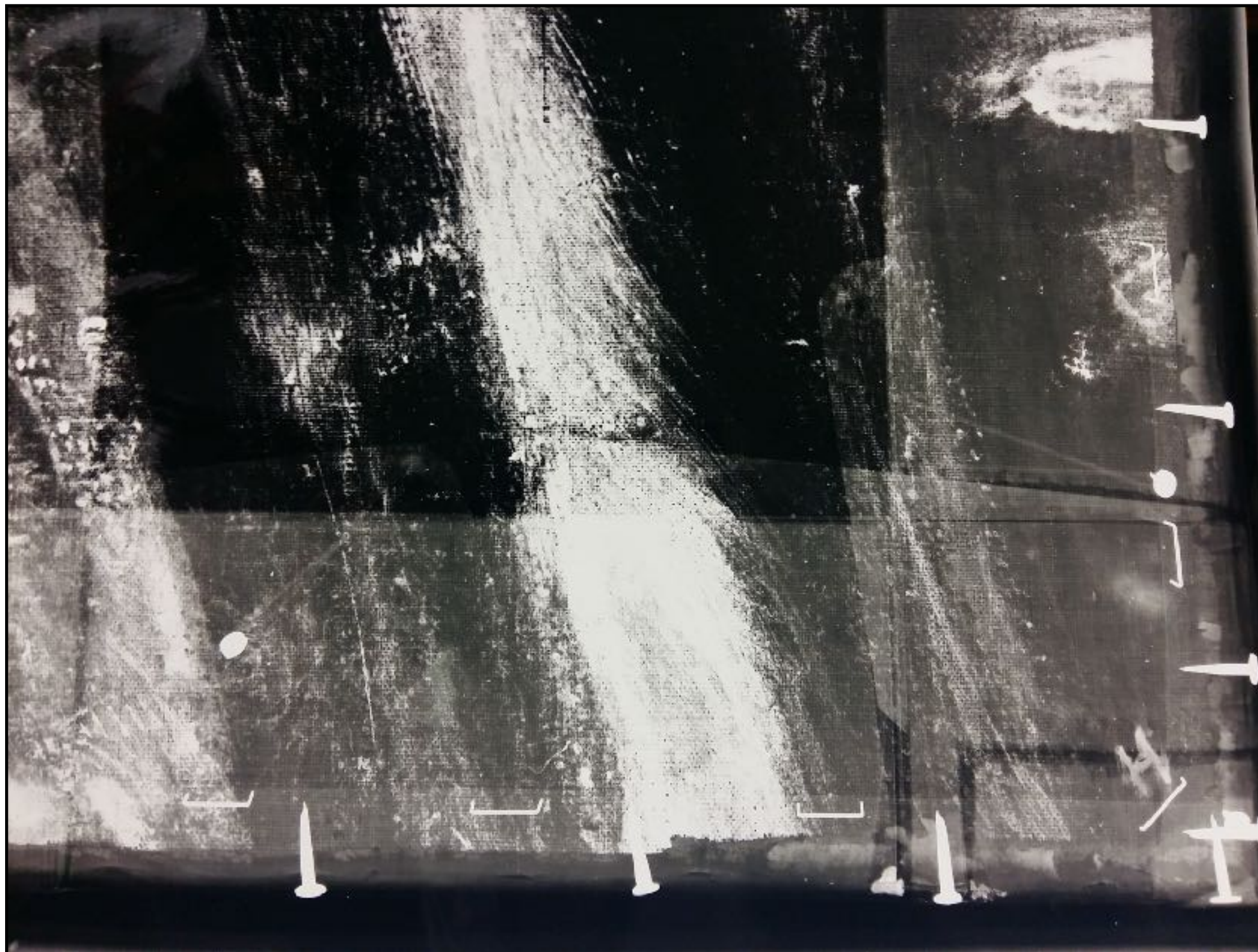


Fig. 92- NG 4004, x-ray mosaic of November 24th, 1978 (detail).

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